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ORIGINAL COMMUNICATIONS.

ART. I. *The Poetry of Architecture.* By KATA PHUSIN.

No. 3. THE VILLA.

I. *The Mountain Villa. — Lago di Como.* (Continued.)

HAVING considered the propriety of the approach, it remains for us to investigate the nature of the feelings excited by the villas of the Lago di Como in particular, and of Italy in general.

We mentioned that the bases of the mountains bordering the Lake of Como were chiefly composed of black marble; black, at least, when polished, and very dark grey in its general effect. This is very finely stratified in beds varying in thickness from an inch to two or three feet; and these beds, taken of a medium thickness, form flat slabs, easily broken into rectangular fragments, which, being excessively compact in their grain, are admirably adapted for a building material. There is a little pale limestone* among the hills to the south; but this marble, or primitive limestone (for it is not highly crystalline), is not only more easy of access, but a more durable stone. Of this, consequently, almost all the buildings on the lake shore are built; and, therefore, were their material unconcealed, would be of a dark, monotonous, and melancholy grey tint, equally uninteresting to the eye, and depressing to the mind. To prevent this result, they are covered with different compositions, sometimes white, more frequently cream-coloured, and of varying depth; the mouldings and pilasters being frequently of deeper tones than the walls. The insides of the grottoes, however, when not cut in the rock itself, are left uncovered, thus forming a strong contrast with the

* *Pale limestone*, with dolomite. A coarse dolomite forms the mass of mountains on the east of Lake Lecco, Monte Campione, &c., and part of the other side, as well as the Monte del Novo, above Cadenabia: but the bases of the hills, along the *shore* of the Lake of Lecco, and all the mountains on both sides of the lower limb of Como, are black limestone. The whole northern half of the lake is bordered by gneiss or mica slate, with tertiary deposit where torrents enter it. So that the dolomite is only obtainable by ascending the hills, and incurring considerable expense of carriage; while the rocks of the shore split into blocks of their own accord, and are otherwise an excellent material.

whiteness outside; giving great depth, and permitting weeds and flowers to root themselves on the roughnesses, and rock streams to distil through the fissures of the dark stones; while all parts of the building to which the eye is drawn, by their form or details (except the capitals of the pilasters), such as the urns, the statues, the steps, or balustrades, are executed in very fine white marble, generally from the quarries of Carrara, which supply quantities of fragments of the finest quality, which, nevertheless, owing to their want of size, or to the presence of conspicuous veins, are unavailable for the higher purposes of sculpture.

Now, the first question is, is this very pale colour desirable? It is to be hoped so, or else the whole of Italy must be pronounced full of impropriety. The first circumstance in its favour is one which, though connected only with lake scenery, we shall notice at length, as it is a point of high importance in our own country. When a small piece of quiet water reposes in a valley, or lies embosomed among crags, its chief beauty is derived from our perception of crystalline depth, united with excessive slumber. In its limited surface we cannot get the sublimity of extent, but we may have the beauty of peace, and the majesty of depth. The object must therefore be, to get the eye off its surface, and to draw it down, to beguile it into that fairy land underneath, which is more beautiful than what it repeats, because it is all full of dreams unattainable and illimitable. This can only be done by keeping its edge out of sight, and guiding the eye off the land into the reflection, as if it were passing into a mist, until it finds itself swimming into the blue sky, with a thrill of unfathomable falling. (If there be not a touch of sky at the bottom, the water will be disagreeably black, and the clearer the more fearful.) Now, one touch of *white* reflection of an object at the edge will destroy the whole illusion, for it will come like the flash of light on armour, and will show the surface, not the depth: it will tell the eye whereabouts it is; will define the limit of the edge; and will turn the dream of limitless depth into a small, uninteresting, reposeless piece of water. In all small lakes or pools, therefore, steep borders of dark crag, or of thick foliage, are to be obtained, if possible; even a shingly shore will spoil them: and this was one reason, it will be remembered, for our admiration of the colour of the Westmoreland cottage, because it never broke the repose of water by its reflection. But this principle applies only to small pieces of water, on which we look down, as much as along the surface. As soon as we get a sheet, even if only a mile across, we lose depth; first, because it is almost impossible to get the surface without a breeze on some part of it; and, again, because we look along it, and get a great deal of sky in the reflection, which,

when occupying too much space, tells as mere flat light. But we may have the beauty of extent in a very high degree; and it is therefore desirable to know how far the water goes, that we may have a clear conception of its space. Now, its border, at a great distance, is always lost, unless it be defined by a very distinct line; and such a line is harsh, flat, and cutting on the eye. To avoid this, the border itself should be dark, as in the other case, so that there may be no continuous horizontal line of demarcation; but one or two bright white objects should be set here and there along or near the edge: their reflections will flash on the dark water, and will inform the eye in a moment of the whole distance and transparency of the surface it is traversing. When there is a slight swell on the water, they will come down in long, beautiful, perpendicular lines, mingling exquisitely with the streaky green of reflected foliage; when there is none, they become a distinct image of the object they repeat, endowed with infinite repose.

These remarks, true of small lakes whose edges are green, apply with far greater force to sheets of water on which the eye passes over ten or twenty miles in one long glance, and the prevailing colour of whose borders is, as we noticed when speaking of the Italian cottage, blue. The white reflections are here excessively valuable, giving space, brilliancy, and transparency; and furnish one very powerful apology, even did other objections render an apology necessary, for the pale tone of the colour of the villas, whose reflections, owing to their size and conspicuous situations, always take a considerable part in the scene, and are therefore things to be attentively considered in the erection of such buildings, particularly in a climate whose calmness renders its lakes quiet for the greater part of the day. Nothing, in fact, can be more beautiful than the intermingling of these bright lines with the darkness of the reversed cypresses seen against the deep azure of the distant hills in the crystalline waters of the lake, of which some one aptly says, "Deep within its azure rest, white villages sleep silently;" or than their columnar perspective, as village after village catches the light, and strikes the image to the very quietest recess of the narrow water, and the very furthest hollow of the folded hills.

From all this, it appears that the effect of the white villa in water is delightful. On land it is quite as important, but more doubtful. The first objection, which strikes us instantly when we *imagine* such a building, is, the want of repose, the startling glare of effect, induced by its unsubdued tint. But this objection does not strike us when we *see* the building; a circumstance which was partly accounted for before, in speaking of the cottage, and which we shall presently see further cause not to

be surprised at. A more important objection is, that such whiteness destroys a great deal of venerable character, and harmonises ill with the melancholy tones of surrounding landscape: and this requires detailed consideration. Paleness of colour destroys the majesty of a building; first, by hinting at a disguised and humble material; and, secondly, by taking away all appearance of age. We shall speak of the effect of the material presently; but the deprivation of apparent antiquity is dependent in a great degree on the colour, and in Italy, where, as we saw before, every thing ought to point to the past, is a serious injury, though, for several reasons, not so fatal as might be imagined; for we do not require, in a building raised as a light summer-house, wherein to while away a few pleasure hours, the evidence of ancestral dignity, without which the château or palace can possess hardly any beauty. We know that it is originally built rather as a plaything than as a monument; as the delight of an individual, not the possession of a race; and that the very lightness and carelessness of feeling with which such a domicile is entered and inhabited by its first builder would demand, to sympathise and keep in unison with them, not the kind of building adapted to excite the veneration of ages, but that which can most gaily minister to the amusement of hours. For all men desire to have memorials of their actions, but none of their recreations; inasmuch as we only wish that to be remembered which others will not, or cannot, perform or experience; and we know that all men can enjoy recreation as much as ourselves. We wish succeeding generations to admire our energy, but not even to be aware of our lassitude; to know when we moved, but not when we rested; how we ruled, not how we condescended: and, therefore, in the case of the triumphal arch, or the hereditary palace, if we are the builders, we desire stability; if the beholders, we are offended with novelty: but, in the case of the villa, the builder desires only a correspondence with his humour; the beholder, evidence of such correspondence; for he feels that the villa is most beautiful when it ministers most to pleasure; that it cannot minister to pleasure without perpetual change, so as to suit the varying ideas, and humours, and imaginations of its inhabitant; and that it cannot possess this light and variable habit with any appearance of antiquity. And, for a yet more important reason, such appearance is not desirable. Melancholy, when it is productive of pleasure, is accompanied either by loveliness in the object exciting it, or by a feeling of pride in the mind experiencing it. Without one of these, it becomes absolute pain, which all men throw off as soon as they can, and suffer under as long as their minds are too weak for the effort. Now, when it is accompanied by loveliness in the object exciting it, it forms

beauty; when by a feeling of pride, it constitutes the pleasure we experience in tragedy, when we have the pride of endurance, or in contemplating the ruin, or the monument, by which we are informed or reminded of the pride of the past. Hence, it appears that age is beautiful only when it is the decay of glory or of power, and memory only delightful when it reposes upon pride.* All remains, therefore, of what was merely devoted to pleasure; all evidence of lost enjoyment; all memorials of the recreation and rest of the departed; in a word, all desolation of delight, is productive of mere pain, for there is no feeling of exultation connected with it. Thus, in any ancient habitation, we pass with reverence and pleasurable emotion through the ordered armoury, where the lances lie, with none to wield; through the lofty hall, where the crested scutcheons glow with the honour of the dead: but we turn sickly away from the arbour which has no hand to tend it, and the boudoir which has no life to lighten it, and the smooth sward which has no light feet to dance on it. So it is in the villa: the more memory, the more sorrow; and, therefore, the less adaptation to its present purpose. But, though cheerful, it should be ethereal in its expression: "spirituel" is a good word, giving ideas of the very highest order of delight that can be obtained in the mere present. It seems, then, that for all these reasons an appearance of age is not desirable, far less necessary, in the villa; but its existing character must be in unison with its country; and it must appear to be inhabited by one brought up in that country, and imbued with its national feelings. In Italy, especially, though we can even here dispense with one component part of elevation of character, age, we must have all the others: we must have high feeling, beauty of form, and depth of effect, or the thing will be a barbarism; the inhabitant must be an Italian, full of imagination and emotion: a villa inhabited by an Englishman, no matter how close its imitation of others, will always be preposterous.

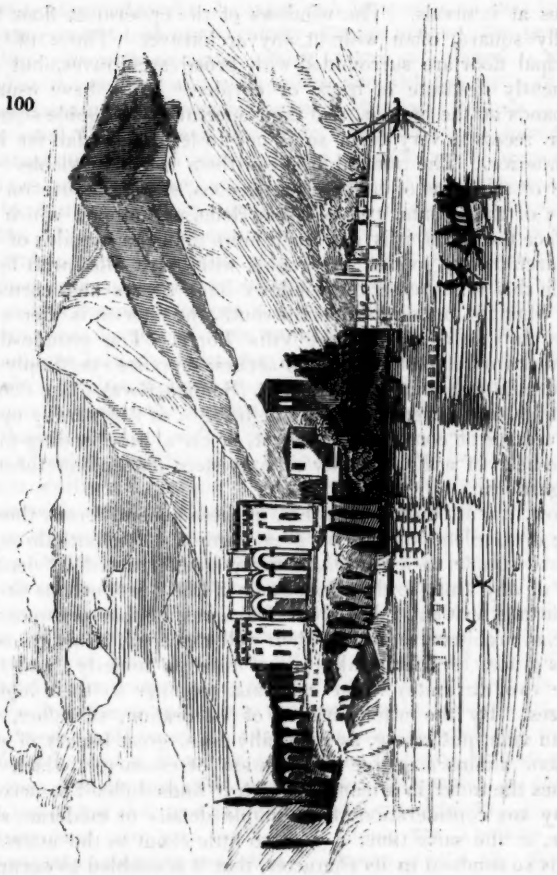
We find, therefore, that white is not to be blamed in the villa for destroying its antiquity; neither is it reprehensible, as harmonising ill with the surrounding landscape: on the contrary, it adds to its brilliancy, without taking away from its depth of tone. We shall consider it as an element of landscape, more particularly, when we come to speak of grouping.

There remains only one accusation to be answered; viz. that it hints at a paltry and unsubstantial material: and this leads us to

* Observe, we are not speaking of emotions felt on remembering what we ourselves have enjoyed, for then the imagination is productive of pleasure by replacing us in enjoyment, but of the feelings excited in the *indifferent* spectator, by the evident decay of power or desolation of enjoyment, of which the first ennobles, the other only harrows, the spirit.

the second question, Is this material allowable? If it were distinctly felt by the eye to be stucco, there could be no question about the matter, it would be decidedly disagreeable; but all the parts to which the eye is attracted are executed in marble, and the stucco merely forms the dead flat of the building, not a single wreath of ornament being formed of it. Its surface is smooth and bright, and altogether avoids what a stone building, when not built of large masses, and uncharged with ornament, always forces upon the attention, the rectangular lines of the blocks, which, however nicely fitted they may be, are "horrible! most horrible!" There is also a great deal of ease and softness in the angular lines of the stucco, which are never sharp or harsh, like those of stone; and it receives shadows with great beauty, a point of infinite importance in this climate; giving them lightness and transparency, without any diminution of depth. It is also rather agreeable to the eye, to pass from the sharp carving of the marble decorations to the ease and smoothness of the stucco; while the utter want of interest in those parts which are executed in it prevents the humility of the material from being offensive: for this passage of the eye from the marble to the composition is managed with the dexterity of the artist, who, that the attention may be drawn to the single point of the picture which is his subject, leaves the rest so obscured and slightly painted, that the mind loses it altogether in its attention to the principal feature.

With all, however, that can be alleged in extenuation of its faults, it cannot be denied that the stucco *does* take away so much of the dignity of the building, that, unless we find enough bestowed by its form and details to counterbalance, and a great deal more than counterbalance, the deterioration occasioned by tone and material, the whole edifice must be condemned, as incongruous with the spirit of the climate, and even with the character of its own gardens and approach. It remains, therefore, to notice the details themselves. Its form is simple to a degree; the roof generally quite flat, so as to leave the mass in the form of a parallelopiped, in general without wings or adjuncts of any sort. Villa Somma-Riva (fig. 87. in p. 247.) is a good example of this general form and proportion, though it has an arched passage on each side, which takes away from its massiness. This excessive weight of effect would be injurious, if the building were set by itself; but, as it always forms the apex of a series of complicated terraces, it both relieves them and gains great dignity by its own unbroken simplicity of size. This general effect of form is not injured, when, as is often the case, an open passage is left in the centre of the building, under tall and well-proportioned arches, supported by pilasters (never by columns). Villa Porro, Lago di Como (*fig.* 100.), is a good



example of this method. The arches hardly ever exceed three in number, and these are all of the same size, so that the crowns of the arches continue the horizontal lines of the rest of the building. Were the centre one higher than the others, these lines would be interrupted, and a great deal of simplicity lost. The covered space under these arches is a delightful, shaded, and breezy retreat in the heat of the day; and the entrance doors usually open into it, so that a current of cool air is obtainable by throwing them open.

The building itself consists of three floors: we remember no instance of a greater number, and only one or two of fewer. It is, in general, crowned with a light balustrade, surmounted by

statues at intervals. The windows of the uppermost floor are usually square, often without any architrave. Those of the principal floor are surrounded with broad architraves, but are frequently destitute of frieze or cornice. They have usually flat bands at the bottom, and their aperture is a double square. Their recess is very deep, so as not to let the sun fall far into the interior. The interval between them is very variable. In some of the villas of highest pretensions, such as those on the banks of the Brenta, that of Isola Bella, and others, which do not face the south, it is not much more than the breadth of the two architraves, so that the rooms within are filled with light. When this is the case, the windows have friezes and cornices. But, when the building fronts the south, the interval is often very great, as in the case of the Villa Porro. The ground-floor windows are frequently set in tall arches, supported on deeply engaged pilasters, as in fig. 87. p. 247. (Somma-Riva). The door is not large, and never entered by high steps, as it generally opens on a terrace of considerable height, or on a wide landing-place at the head of a flight of fifty or sixty steps descending through the gardens.

Now, it will be observed, that, in these general forms, though there is no splendour, there is great dignity. The lines throughout are simple to a degree, entirely uninterrupted by decorations of any kind, so that the beauty of their proportions is left visible and evident. We shall see hereafter that ornament in Grecian architecture, while, when well managed, it always adds to its grace, invariably takes away from its majesty; and that these two attributes never can exist together in their highest degrees. By the utter absence of decoration, therefore, the Italian villa, possessing, as it usually does, great beauty of proportion, attains a degree of elevation of character, which impresses the mind in a manner which it finds difficult to account for by any consideration of its simple details or moderate size; while, at the same time, it lays so little claim to the attention, and is so subdued in its character, that it is enabled to occupy a conspicuous place in a landscape, without any appearance of intrusion. The glance of the beholder rises from the labyrinth of terrace and arbour beneath, almost wearedly; it meets, as it ascends, with a gradual increase of bright marble and simple light, and with a proportionate diminution of dark foliage and complicated shadow, till it rests finally on a piece of simple brilliancy, chaste and unpretending, yet singularly dignified; and does not find its colour too harsh, because its form is so simple: for colour of any kind is only injurious when the eye is too much attracted to it; and, when there is so much quietness of detail as to prevent this misfortune, the building will possess the cheerfulness, without losing the tranquillity, and will seem to

have been erected, and to be inhabited, by a mind of that beautiful temperament wherein modesty tempers majesty, and gentleness mingles with rejoicing, which, above all others, is most suited to the essence, and most interwoven with the spirit, of the natural beauty whose peculiar power is invariably repose.

So much for its general character. Considered by principles of composition, it will also be found beautiful. Its prevailing lines are horizontal; and every artist knows that, where peaks of any kind are in sight, the lines above which they rise ought to be flat. It has not one acute angle in all its details, and very few intersections of verticals with horizontals; while all that do intersect seem useful as supporting the mass. The just application of the statues at the top is more doubtful, and is considered reprehensible by several high authorities, who, nevertheless, are inconsistent enough to let the balustrade pass uncalumniated, though it is objectionable on exactly the same grounds; for, if the statues suggest the enquiry of "What are they doing there?" the balustrade compels its beholder to ask, "whom it keeps from tumbling over?" The truth is, that the balustrade and statues derive their origin from a period when there was easy access to the roof of either temple or villa; (that there was such access is proved by a passage in the *Iphigenia Taurica*, line 113., where Orestes speaks of getting up to the triglyphs of a Doric temple as an easy matter;) and when the flat roofs were used, not, perhaps, as an evening promenade, as in Palestine, but as a place of observation, and occasionally of defence. They were composed of large flat slabs of stone (κεράμος *), peculiarly adapted for walking, one or two of which, when taken up, left an opening of easy access into the house, as in Luke, v. 19., and were perpetually used in Greece as missile weapons, in the event of a hostile attack or sedition in the city, by parties of old men, women, and children, who used, as a matter of course, to retire to the roof as a place of convenient defence. By such attacks from the roof with the κεράμος the Thebans were thrown into confusion in Platæa. (*Thucyd.*, ii. 4.) So, also, we find the roof immediately resorted to in the case of the starving of Pausanias in the Temple of Minerva of the Brazen House, and in that of the massacre of the aristocratic party at Corcyra (*Thucyd.*, iv. 48.): — Ἀναβάντες δὲ ἐπὶ τὸ τέγος τοῦ οἰκήματος, καὶ διελόντες τὴν ὀροφὴν, ἔβαλλον τῷ κεράμῳ. Now, where the roof was thus a place of frequent resort, there

* In the large buildings, that is: κεράμος also signifies earthen tiling, and sometimes earthenware in general, as in *Herodotus*, iii. 6. It appears that such tiling was frequently used in smaller edifices. The Greeks may have derived their flat roofs from Egypt. Herodotus mentions of the Labyrinth of the Twelve Kings, that ὀροφὴ δὲ πάντων τούτων λιθίνη, but not as if the circumstance were in the least extraordinary.

could be no more useful decoration than a balustrade; nor one more appropriate or beautiful, than occasional statues in attitudes of watchfulness, expectation, or observation: and even now, wherever the roof is flat, we have an idea of convenience and facility of access, which still renders the balustrade agreeable, and the statue beautiful, if well designed. It must not be a figure of perfect peace or repose, far less should it be in violent action; but it should be fixed in that quick startled stillness, which is the result of intent observation or expectation, and which seems ready to start into motion every instant. Its height should be slightly colossal, as it is always to be seen against the sky; and its draperies should not be too heavy, as the eye will always expect them to be caught by the wind. We shall enter into this subject, however, more fully hereafter. We only wish at present to vindicate from the charge of impropriety one of the chief features of the Italian villa. Its white figures, always marble, remain entirely unsullied by the weather, and stand out with great majesty against the blue air behind them, taking away from the heaviness, without destroying the simplicity, of the general form.

It seems, then, that, by its form and details, the villa of the Lago di Como attains so high a degree of elevation of character, as not only brings it into harmony of its *locus*, without any assistance from appearance of antiquity, but may, we think, permit it to dispense even with solidity of material, and appear in light summer stucco, instead of raising itself in imperishable marble. And this conclusion, which is merely theoretical, is verified by fact; for we remember no instance, except in cases where poverty had overpowered pretension, or decay had turned rejoicing into silence, in which the lightness of the material was offensive to the feelings; in all cases, it is agreeable to the eye. Where it is allowed to get worn, and discoloured, and broken, it induces a wretched mockery of the dignified form which it preserves; but, as long as it is renewed at proper periods, and watched over by the eye of its inhabitant, it is an excellent and easily managed medium of effect.

With all the praise, however, which we have bestowed upon it, we do not say that the villa of the Larian Lake is perfection; indeed we cannot say so, until we have compared it with a few other instances, chiefly to be found in Italy, on whose soil we delay, as being the native country of the villa, properly so called, and as even yet being almost the only spot of Europe where any good specimens of it are to be found: for we do not understand by the term "villa," a cubic erection, with one window on each side of a verdant door, and three in the second and uppermost story, such as the word suggests to the fertile imagination of ruralising cheesemongers; neither do we under-

stand the quiet and unpretending country house of a respectable gentleman; neither do we understand such a magnificent mass of hereditary stone as generally forms the autumn retreat of an English noble; but we understand the light but elaborate summer habitation, raised however and wherever it pleases his fancy, by some individual of great wealth and influence, who can enrich it with every attribute of beauty; furnish it with every appurtenance of pleasure; and repose in it with the dignity of a mind trained to exertion or authority. Such a building could not exist in Greece, where every district a mile and a quarter square was quarrelling with all its neighbours. It could exist, and did exist, in Italy, where the Roman power secured tranquillity, and the Roman constitution distributed its authority among a great number of individuals, on whom, while it raised them to a position of great influence, and, in its later times, of wealth, it did not bestow the power of raising palaces or private fortresses. The villa was their peculiar habitation, their only resource, and a most agreeable one; because the multitudes of the kingdom being, for a long period, confined to a narrow territory, though ruling the world, rendered the population of the city so dense, as to drive out its higher ranks to the neighbouring hamlets of Tibur and Tusculum. In other districts of Europe the villa is not found, because in very perfect monarchies, as in Austria, the power is thrown chiefly into the hands of a few, who build themselves palaces, not villas; and in perfect republics, as in Switzerland, the power is so split among the multitude, that nobody can build himself any thing. In general, in kingdoms of great extent, the country house becomes the permanent and hereditary habitation; and the villas are all crowded together, and form gingerbread rows in the environs of the capital: and, in France and Germany, the excessively disturbed state of affairs in the middle ages compelled every petty baron or noble to defend himself, and retaliate on his neighbours as he best could, till the villa was lost in the château and the fortress; and men now continue to build as their forefathers built (and long may they do so), surrounding the domicile of pleasure with a moat and a glacis, and guarding its garret windows with turrets and towers: while, in England, the nobles, comparatively few, and of great power, inhabit palaces, not villas; and the rest of the population is chiefly crowded into cities, in the activity of commerce, or dispersed over estates in that of agriculture; leaving only one grade of gentry, who have neither the taste to desire, nor the power to erect, the villa, properly so called.

We must not, therefore, be surprised, if, on leaving Italy, where the crowd of poverty-stricken nobility can still repose their pride in the true villa, we find no farther examples of it

worthy of consideration, though we hope to have far greater pleasure in contemplating its substitutes, the château and the fortress. We must be excused, therefore, for devoting one paper more to the state of villa architecture in Italy; after which we shall endeavour to apply the principles we shall have deduced to the correction of some abuses in the erection of English country houses, in cases where scenery would demand beauty of design, and wealth permit finish of decoration.

ART. II. *Notes to the Italian Villa*, No. 3. p. 244. By KATA PHUSIN.

THE following paragraphs ought to have been given as foot notes, along with the article on the Italian Villa in our last Number, p. 241.; but they were inadvertently overlooked by the Conductor, who begs to apologise to Kata Phusin, and to his readers, for the seeming neglect.

The Character of the Italian Mountain Scenery. (p. 244.) — That Italian mountain scenery has less elevation of character than the plains may appear singular; but there are many simple reasons for a fact which, we doubt not, has been felt by every one (capable of feeling anything), who ever left the Alps to pass into Lombardy. The first is, that a mountain scene, as we saw in the last paper, bears no traces of decay, since it never possessed any of life. The desolation of the sterile peaks, never having been interrupted, is altogether free from the melancholy which is consequent on the passing away of interruption. They stood up in the time of Italy's glory, into the voiceless air, while all the life and light which she remembers now was working and moving at their feet, an animated cloud, which they did not feel, and do not miss. That region of life never reached up their flanks, and has left them no memorials of its being; they have no associations, no monuments, no memories; we look on them as we would on other hills: things of abstract and natural magnificence, which the presence of man could not increase, nor his departure sadden. They are, in consequence, destitute of all that renders the name of Ausonia thrilling, or her champaigns beautiful, beyond the mere splendour of climate; and even that splendour is unshared by the mountain; its cold atmosphere being undistinguished by any of that rich, purple, ethereal transparency, which gives the air of the plains its depth of feeling: we can find no better expression.

Secondly. In all hill scenery, though there is increase of size, there is want of distance. We are not speaking of views from summits, but of the average aspect of valleys. Suppose the mountains be 10,000 ft. high, their summit will not be more than six miles distant in a direct line; and there is a general sense of confinement, induced by their wall-like boundaries, which is painful, contrasted with the wide expatiation of spirit induced by a distant view over plains. In ordinary countries, however, where the plain is an uninteresting mass of cultivation, the sublimity of distance is not to be compared to that of size: but, where every yard of the cultivated country has its tale to tell; where it is perpetually intersected by rivers whose names are meaning music, and glancing with cities and villages, every one of which has its own halo round its head; and where the eye is carried by the clearness of the air over the blue of the farthest horizon, without finding one wreath of mist, or one shadowy cloud, to check the distinctness of the impression; the mental emotions excited are richer, and deeper, and swifter than could be awakened by the noblest hills of the earth, unconnected with the deeds of men.

Lastly. The plain country of Italy has not even to choose between the glory of distance and of size, for it has both. I do not think there is a spot, from Venice to Messina, where two ranges of mountains, at the least, are not in sight at the same time. In Lombardy, the Alps are on one side, the Apennines on the other; in the Venetian territory, the Alps, Apennines, and Euganean Hills; going southwards, the Apennines always, their outworks running far towards the sea, and the coast itself frequently mountainous. Now, the aspect of a noble range of hills, at a considerable distance, is, in our opinion, far more imposing (considered in the abstract) than they are seen near: their height is better told, their outlines softer and more melodious, their majesty more mysterious. But, in Italy, they gain more by distance than majesty: they gain life. They cease to be the cold forgetful things they were; they hold the noble plains in their lap, and become venerable, as having looked down upon them, and watched over them for ever, unchanging; they become part of the picture of associations: we endow them with memory, and then feel them to be possessed of all that is glorious on earth.

For these three reasons, then, the plains of Italy possess far more elevation of character than her hill scenery. To the northward, this contrast is felt very strikingly, as the distinction is well marked, the Alps rising sharply and suddenly. To the southward, the plain is more mingled with low projecting promontories, and unites almost every kind of beauty. However, even among her northern lakes, the richness of the low climate, and the magnificence of form and colour presented by the distant Alps, raise the character of the scene immeasurably above that of most hill landscapes, even were those natural features entirely unassisted by associations which, though more sparingly scattered than in the south, are sufficient to give light to every leaf, and voice to every wave.

The Avalanche brands the Mountain Top. (p. 244.) —There are two kinds of winter avalanches; the one, sheets of frozen snow, sliding on the surface of others. The swiftness of these, as the clavendier of the Convent of St. Bernard told me, he could compare to nothing but that of a cannon ball of equal size. The other is a rolling mass of snow, accumulating in its descent. This, grazing the bare hill side, tears up its surface like dust, bringing away soil, rock, and vegetation, as a grazing ball tears flesh; and leaving its withered path distinct on the green hill side, as if the mountain had been branded with red-hot iron. They generally keep to the same paths; but, when the snow accumulates, and sends down one the wrong way, it has been known to cut down a pine forest, as a scythe mows grass. The tale of its work is well told by the seared and branded marks on the hill summits and sides.

Art. III. *The sacred Tombs of the Valley of Jehoshaphat.* By M. Raoul Rochette.

(Translated from *L'Echo du Monde savant*, Dec. 30. 1837, p. 207, 208.)

Tomb of Helen. — At the distance of three stadii from Jerusalem, once stood the tomb of a princess named Helen, wife and sister of Monabasus, king of the Adiabenians, which Pausanias compares to the celebrated tomb of Mausolus. From what Josephus says of it in his *Antiquities*, it must have been formed of a large basement or platform (terre-plein) of marble, surmounted by three pyramids, which represent, no doubt, the three members of the royal family of Judah, interred in the tomb; viz., Monabasus, Helen, and Isates. The bodies were placed in the solid part of the base, which for this purpose was

divided into several compartments; and with the bodies of the princes were deposited those of their servants, who, according to the manners of the East, accompanied them to their last abode; or, in other words, were sacrificed to their manes. The name of the Tomb of the Kings of Judah has been improperly given to this monument, by writers who could not believe that the real tombs of the kings were lost to us, and who thought they had discovered them in that of Helen.

Tomb of the Maccabees. — Josephus gives us very curious and circumstantial details of this monument. (*Ant.*, lib. i.) It was in every respect like that of Helen. The basement was of white marble, polished; it was surmounted by six pyramids, placed in two rows; and by a seventh, which rose in the middle, and which is supposed to have been consecrated to Judas Maccabeus. These pyramids, placed on the funeral monuments of the Jews, were, undoubtedly, as they were among the Egyptians and Phœnicians, the representation of the principle of life in the temples, and of death on the tombs. It is impossible not to be struck with the resemblance which exists between the two monuments just described, and the most famous tomb of antiquity, viz. that of Mausolus, which was also composed of a large basement surmounted by a pyramid, and the celebrity of which, as it is well known, caused the name of *mausoleum* to be given to the largest and most beautiful tombs that were made in after times.

Tomb of Mausolus. — The intimate connexion which exists between the monuments of Helen, of the Maccabees, and of Mausolus, and the high reputation of the latter, has induced M. Raoul Rochette to dwell rather more at length on it, and to show its exterior and interior arrangement, in order to enable his readers to form a better judgment of the Jewish tombs, the arrangements of which were undoubtedly nearly the same.

The tomb of Mausolus, which was considered by the ancients as one of the seven wonders of the world, was erected to the memory of the king of Caria of that name, by Artemisia, his wife. This monument, which has served as a type and model for those of the Jews, was built, towards the hundredth Olympiad by the architects Satyrus and Phitæus. It was decorated with statues and bas-reliefs in marble, and baked earth (terre cuite), covered with gold leaf (feuilles d'or), by the celebrated Scopas, Bryaxis, Timotheus, and Leochares; and Praxiteles executed the interior bas-reliefs. Pliny, in his *History* (book xxxvi.), and M. Quatremère de Quincy, in his last archæological dissertation, taking into consideration only the exterior of this monument, have mentioned the first four sculptors, and have not spoken of Praxiteles; but Vitruvius informs us that the interior sculptures were from the chisel of that celebrated artist.

The city of Halicarnassus, celebrated as the birthplace of

Herodotus, where this monument was erected, formed a sort of amphitheatre, sloping downwards from the summit of a hill, to the sea which washed its walls. The most elevated part was occupied by the citadel and the temple, dedicated to the god Mars; the lower part, extending to the port, formed a public square. On the top of the hill was also a palace, the walls of which, built of brick, were covered with marble from Proconesus. It was in the lower part of the amphitheatre that the queen Artemisia, inconsolable for the loss of Mausolus, erected his magnificent tomb.

According to Pliny, this building was 411 Roman feet in circumference, and 25 cubits high. It was composed of two principal parts of equal height, formed by a massive square platform supporting an Ionic colonnade, and by a pyramidal building of 24 cubits high, surmounted by a quadriga, or chariot. In the restoration of the building, which has been made by M. Quatremère from the designs of M. Hugot, there is a large massive square platform, on which is raised the stylobate which bears the colonnade. The latter is surmounted by a frieze, a cornice, with statues on the crown-work (couronnement), and ornamented with the groups of Dioscures at the angles of the front of the monument, and with the trophies at those of the stylobate. About seventeen years after the consecration of this monument, the city was taken by Alexander, who only preserved the temple and other public monuments. The tomb of Mausolus, which was then just completed, was also spared by this prince; for Pausanias says, several centuries afterwards: "The monument of Mausolus was so large, and so remarkable in all its parts, that the Romans, struck with admiration, called their most magnificent monuments *mausoleums*." From the age of Alexander to the eleventh century of the Christian era, the monument was exempt from the thefts that were often committed in ancient tombs. One hundred years later, Eustathius of Constantinople wrote: "Amongst the ancients, great attention was paid to the construction of tombs, and large sums were expended on them. That of Mausolus, a very magnificent work, and executed with infinite skill, was, *and still is*, an object of admiration." But, at the beginning of the fifteenth century, in 1404, the city of Halicarnassus was taken by the knights templars, who fortified the place against the Turks by raising constructions on the ancient monuments; which afterwards caused the total destruction of the tomb of Mausolus.

Claude Guichard, an author of the sixteenth century, has left a very rare and curious work, entitled *Funérailles et Manières diverses d'ensevelir les Anciens*, in which he gives the history, and almost the *procès verbal*, of the destruction of this precious monument. M. de Sainte Croix, in an excellent memoir on

the tomb of Mausolus, inserted in vol. xi. of the *Mémoires de l'Académie des Inscriptions*, elucidates and comments upon certain passages of this work. Guichard, who wrote in 1573, and who was an eyewitness of what he relates, after having told that, in 1522, the knights, in order to fortify the castle of Halicarnassus, hollowed the ground (creusèrent) near the tomb, adds the following curious and melancholy details which will complete the history and description of the tomb of Mausolus.

.... "At the end of five or six days, they made a great discovery: one afternoon, they saw an opening, like the entrance to a cellar. They took a light, and descended into it, where they found a large beautiful square apartment, adorned all round with pillars of marble, with their bases, capitals, architraves, friezes, and cornices cut in bas-relief. This must have been the sepulchral chamber, all the sculptures in which were by Phidias. The spaces between the pillars were filled with panels ornamented with fillets and mouldings, and sculptures of different-coloured marbles, corresponding with the rest of the building; the panels being neatly inlaid on the white ground of the wall, where nothing was to be seen but histories and battles sculptured in bas-relief. After having looked at and admired the singularity of the work, they pulled down, broke, and destroyed it, in order to make use of the materials, as they had done with the part that remained standing above ground (that is to say, to use them for stone and plaster). Besides this apartment, they afterwards found a very low door, which led to another room like an antechamber, in which was a tomb, or sarcophagus, with its vase and lid of white marble, quite perfect, and shining beautifully, which they did not uncover, from want of time, the retreat having already sounded..... Thus, this magnificent tomb, reckoned one of the seven wonders of the world, after having escaped the fury of the barbarians, and stood during the space of 2247 years (M. de Sainte Croix here, with justice, corrects Claude Guichard, who is mistaken in about four centuries), was discovered, and demolished to repair the Castle of St. Peter, by the knights of Rhodes, who were immediately driven out from that citadel by the Turks, and soon after from all Asia."

ART. IV. *Hints on Construction: addressed to Architectural Students.* By GEORGE GODWIN, Jun., F.S.A. and M.I.A.

No. 2. FOUNDATIONS. (*Continued from* p. 255.)

"Certamente è bisogna sì in tutto lo edificio, sì principalmente ancora in essi fondamenti, non si far beffe di cosa alcuna, nella quale si possa desiderare la ragione e la diligenza d' un' accurato e circospetto edificatore."—*Alberti.*

THE reintroduction of concreted masses, or, to use the special appellation of one particular formation of this kind, *concrete*, as

a material in construction, is of recent date; although it was used both by the ancient architects and by those of the middle ages, and is to be seen in almost every part of the world, enduring to this day. Ralph Walker, Esq., and Sir Robert Smirke*, were among the first, if they were not *the* first, who employed it, and advocated its use in England, and, for so doing, deserve the thanks of all who are interested in the matter; "as which of us are not?" We will not, however, in this place descant upon its history or excellence, but confine ourselves to a description of the ordinary mode of preparing and applying it.

The fittest materials that can be employed in its composition are, Thames ballast (the best is found between London Bridge and Westminster Bridge, and is of a black colour) and Dorking stone-lime, finely ground or pounded, mixed in the proportion of one part of pounded lime by measure, and seven parts of ballast. The ballast should itself consist of two parts stones and one part sand; but a less preponderance of stones, rather than greater, is to be preferred: in which latter case, however, the quantity of lime may with propriety be increased, as the sand and lime should always be relatively apportioned in order to form a good concrete.

Repeated experiments have shown us that excellent concrete may be made with one part of strong well-burnt lime, and eight, or even nine, parts of ballast; but, as lime varies in goodness, and as the quantity of sand in the Thames ballast usually exceeds the proportion mentioned, we prefer, as a general rule, to use one of the former to seven of the latter.

Seven barrow-loads of ballast, then, being formed into a flat bed on the ground, one barrow-load of pounded lime is sprinkled over it with a spade by a labourer, while others turn over the ballast, and thoroughly wet the mass with water; the object being to slake the whole of the lime, and effect a perfect admixture of the two materials. One great point to be aimed at in the preparation of concrete is entire consolidation: to attain which, variety of size in the ballast used is essential, in order that the interstices necessarily occurring between the larger stones composing it may be filled by the smaller ones; and that the sand and lime, forming mortar, should occupy those cavities still remaining, and thus form the whole into a solid mass of flint. To this end, then, it is necessary the concrete should be turned over several times, while it is in a fluid state, if we may so speak; but this should be done with great promptness, in order that the

* The name of this distinguished architect, in connexion with the reintroduction of concrete, was omitted, through want of positive information, in the essay on that subject printed in the *Transactions of the Institute of British Architects;* and the author of it seizes the opportunity here offered to rectify the error.

composition may not set before it be put into the foundation, as any dislocation, or even disturbance, after it is once set, tends to lessen its goodness. It is expedient also, in another point of view, that concrete should be thoroughly turned over and mixed before using it, insomuch as the induration of all calcareous cements depends on the absorption of carbonic acid gas from the atmosphere, or otherwise; and, by thus bringing every particle of the lime in the concrete into contact, for a short space of time, with the atmosphere, the composition, when thrown into its destined situation, will harden more quickly than would otherwise have been the case. Of the rationale of these effects we shall speak hereafter, when treating of mortars and cements.

In regard to the quantity of water to be used for the preparation of concrete, opinions differ; and, although we are disposed to say that no more water need be employed than is found requisite thoroughly to wet the whole mass and slake the lime, we believe that very much more may be introduced without any other ill effect than this; namely, that, as the concrete so made will not set so quickly as it otherwise would, delay may be caused. During the formation of a concrete substratum beneath the national schools in St. Martin's parish, the main water-pipe burst, and, while the concrete was yet fluid, the contents overflowed it. As this happened on a Saturday evening, the water was not pumped out until the following Monday, and the mass was therefore perfectly saturated; notwithstanding which, or, as some thought, in consequence of which, when workmen attempted to cut through this, a short time afterwards, in order to make a drain, they found it almost impenetrable by their tools: it was a solid rock.

When the composition is thoroughly mixed, it should be immediately shoveled into barrows, wheeled up a platform so erected as to give a fall of at least 7 ft., and forthwith discharged into the excavation prepared for it, the fall assisting mechanically the solidification of the mass. In cases where the foundation is tolerably good, and concrete is put into shallow trenches for the walls merely, it is generally found necessary to level it down with a spade after it is thrown in: indeed, it can hardly be avoided. This certainly tends, however, to lessen its excellence; and, when a solid substratum is to be formed on the whole site of the intended building, or the concrete is otherwise put in in large masses, this should not be permitted (except to form a level surface at the top), but each barrow-load should be allowed to remain undisturbed where it first falls.

One barrow-load of concrete should not immediately follow another on the same spot. The whole site to be filled in with the composition should receive one layer previously to the commencement of a second in any one place; by which mode of proceeding not merely are upright breaks through the whole thickness

of the substratum prevented, but the induration of the mass is assisted.

The use of perfectly fresh lime for the preparation of concrete should be strictly enforced. By exposure to the air, lime becomes deteriorated, and the goodness of concrete afterwards composed of it would, of course, be interfered with. Ground lime, as obtained from the merchants, is to be viewed with suspicion, insomuch as (to say nothing of the difficulty of discovering, after it is ground, whether the whole of it was thoroughly burnt) all the lime which slakes upon the premises by exposure to the weather is, in many lime-yards, thrown into the mill; and, even where this is not the case, the lime often remains so long in the mill, exposed to the air, before it is wanted, as to lose all its goodness, and become mere pounded chalk. When it is important, therefore, that the concrete should be of the best description, and you are unacquainted with the lime merchant, the lime should be brought on to the premises in lumps (as for mortar), and ground or pounded there; and, in this latter case, it must be afterwards passed through a fine sieve: otherwise, the unburnt and ill-burnt lime (which is harder than that which is well burnt) remains in lumps; and as these, when made into concrete, do not slake readily, oftentimes not until the rest of the mass is set, the concrete is injured; for, in slaking, lime *expands*, and, in so doing, has, of course, a tendency to split or rend that which confines it.

We may add, as bearing upon this part of the subject, that, if no perceptible heat be evolved by the concrete in setting, one may be sure that the lime was stale and unfit for use.

We have spoken above of the ordinary, and perhaps the best, materials for forming an artificial substratum; but circumstances would often preclude their use, or render it inexpedient, and others must necessarily then be sought. The silt of most rivers, if free from clayey particles and dirt, or the stones from the sea side, mixed with a proper quantity of sand, will make excellent concrete with lime. Gravel may often be dug on the premises, sufficiently free from dirt to form, when concreted by lime, a good substratum for ordinary purposes, taking care, however, to add sharp sand, if the proportion which that material bears in it to the stones be less than we have said it should be, or to increase the quantity of lime if it be greater. The refuse of a brick-field, provided variety of size in the pieces be attained, may, with sand and lime, be advantageously used for the purpose in the absence of Thames ballast, although it seems certain that there will be the same difference between two masses of concrete, one of which is prepared of Thames ballast (which is all flint), and the other of the former material, as there is between a brick and a stone.

We have lately seen concrete formed partly of ballast and partly of strong brick earth, burnt on the spot for the purpose. The earth (which came out of the excavation made for the intended building) was piled upon a bed of faggots prepared to receive it, and was intermixed with a small quantity of breeze. After it was burnt, it had the appearance of slag; and, on being broken into small pieces, none of them so large as a fist, was wheeled away for use. The cost of burning and preparing it, independently of the digging in the first instance, was said to be about tenpence per yard cube; and, as Thames ballast costs usually, at the water side, 1*s.* 2*d.* per yard, and the expense of carting it to this particular spot was as much more, a great saving was effected by using the earth. In this case, as in others, however, if, when the ballast and the burnt earth be mixed, the proportion which the stones and lumps of brick bear to the sand in it be more than as 2 to 1, a proper quantity of this latter should be added; or (better still, perhaps, under some circumstances) a portion of the burnt clay, properly selected, might be ground, and used in the place of sand.

The cost of a cubic yard of concrete, as it is ordinarily prepared, allowing for the contractor's profit, is about 6*s.* 6*d.* in the neighbourhood of London, and may be calculated thus. It is now well known that seven yards of Thames ballast, and one yard of pounded lime, when wetted and mixed, will not form eight yards of concrete, in consequence of the intimate connexion of the materials which is induced by the admixture, or, in other words, of the solidification which is effected. The loss of bulk, according to various experiments, several times repeated, appears to be about one fifth of the quantity of the materials when separate; so that seven yards of ballast, and one yard of pounded lime, will not make more than 6½ yards of concrete. Now,

	£	*s.*	*d.*
Seven yards of Thames ballast cost, at the water's edge, about	0	8	2
Cartage, say	0	7	0
One yard of pounded Dorking lime, at the wharf	0	13	6
Cartage	0	1	0
Labour in preparing the concrete, and throwing it into the excavations, which operations should employ five men	0	7	0
Profit and use of scaffolding (15 per cent)	0	5	6
	2	2	2

Therefore 6½ yards of concrete cost about 2*l.* 2*s.* 2*d.*, being at the rate of 6*s.* 6*d.* per yard. A cubic yard of stock brickwork, properly executed, costs about 20*s.* So that, as we said in our former paper on this subject, a concrete substratum might be laid, in many instances, under the walls of common dwelling-houses (whereby the possibility of disruption, through

the unequal settlement of the walls, is materially lessened, if not entirely removed, without any additional expense; insomuch as the cost of brickwork rendered unnecessary, even if the quantity were much less than that of the concrete introduced, would conterbalance the cost of the latter. In preparing a specification of the various works to be done in the erection of such a building, the following sentences with regard to the proposed substratum of concrete, to follow the directions to the excavator, would, perhaps, be sufficient:—"Form concrete foundation for all external and internal walls, chimneys, and partitions, 1 ft. thick, and 18 in. wider, in all cases, than brick footings, composed of Thames ballast" (or otherwise, as the case may be); "and fresh well-burnt Dorking lime, mixed according to the architect's directions, in the proportion of 1 of lime, when ground, and 7 of ballast, and thrown into the trenches, from a stage 7 ft. high, in two layers, each 6 in. thick. Note.—The lime is to be ground, or pounded and sifted, on the premises; and the ballast is to be of approved quality."

In the preparation of foundations for buildings of large size, when the bottom is bad, Yorkshire stone landings are sometimes laid on the top of the artificial subtratum in the line of the walls (further connected by means of a chain bond of iron let into the landings throughout the whole extent); and on these the superstructure is commenced. Except, however, under the circumstances mentioned, we should place so much dependence on a mass of concrete occupying the whole site of the building, provided it were properly prepared, as to deem this precaution almost needless. We may notice that, when the iron chain bond is used, it should be so arranged as to prevent the expansion or contraction of the metal (which *might* be effected by changes of temperature) from injuring the stability of the building.

Concrete may be advantageously used for underpinning and securing old foundations; and we will mention one instance in which we have recently so employed it. The party wall of a house in the neighbourhood of St. Martin's Lane, built upon a very unstable bottom, suddenly sank down after having been erected many years, so much so, indeed, as to rend asunder the stone sill in the front windows, and threaten danger to the inhabitants. On digging out the soil down to the footings of the wall, the ground on which it was erected was found to be exceedingly unsound, having been, apparently, the site of several cesspools. Strong needles of oak were then passed through the wall, in order to support it; the ground was taken from under the footings to a depth of nearly 3 ft.; and a mass of concrete, composed of Thames ballast and Dorking lime in the manner above described, was rammed in (a fall not being attainable), so as to occupy the

whole space excavated, to within a few inches of the bottom course of the brick footings. On the top of this mass, and beneath the wall, a tier of Yorkshire stone landings was laid, which was closely wedged up with pieces of slate to the under side of the wall. The various fractures caused by the settlement were afterwards repaired, and the whole now remains perfectly sound.

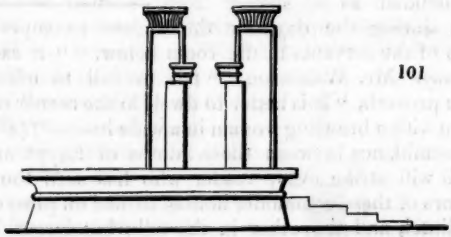
REVIEWS.

ART. I. *Manners and Customs of the ancient Egyptians; including their private Life, Government, Laws, Arts, Manufactures, Religion, and early History; derived from a Comparison of the Paintings, Sculptures, and Monuments, still existing, with the Accounts of ancient Authors. Illustrated by Drawings of those Subjects.* By J. G. Wilkinson, F.R.S., M.R.S.L., &c., Author of "A General View of Egypt, and Topography of Thebes," &c. 3 vols. 8vo, numerous cuts and plates, plain and coloured. London, 1837.

THIS work may be considered as the most complete account of ancient Egypt that has yet been published. The author has devoted the best part of his life to the study of Egyptian antiquities in their native localities; and he is still engaged in the same pursuit. It is difficult to conceive a person who takes any interest in the past, who would not be delighted with the perusal of these volumes; and to many they will be highly instructive, as showing in what an advanced state all the arts which are necessary for human subsistence were, upwards of fifteen centuries before the commencement of our era. The work will be particularly instructive to architects who take an interest in the antiquity of their art. They will here find that the construction of arches, which some suppose to have been unknown to the Greeks, and invented by the Romans, was practised in Thebes in the year 1500 B. C. They will find the origin of the Doric order in a depressed lotus flower; and see, in the numerous engravings of household furniture with which this work is illustrated, the types of many of the beautiful chairs and other cabinet and upholstery articles that enrich the work of the late Thomas Hope, and which, at the time it was published, greatly improved the taste of this country in these matters.

The houses in Egyptian towns, in ancient times, were generally small and low, as at present; but in Thebes some of them were four and five stories high. The streets were narrow, and, in towns built at the mouths of mountain ravines, the main street was at the same time the bed of the torrent, as is sometimes the case in Spain and Italy at the present day. In general, all buildings were constructed of crude unburnt brick, with the exception of the temples, which were of stone. The manufacture

of brick is supposed to have been a government monopoly, and the bricks in ancient ruins are consequently generally found stamped with the seal of the king. Hence, the government captives were employed in brick-making; and, though the sculptures at present existing do not represent the Hebrews engaged in the operation of brick-making, because the remains in that part of Egypt where they lived have not been preserved, yet it is curious, Mr. Wilkinson observes, "to discover other foreign captives occupied in the same manner, overlooked by similar task-masters, and performing the very same labours, as the Israelites described in the *Bible;* and no one can look at the paintings of Thebes, representing brick-makers, without a feeling of the highest interest." (Vol. ii. p. 98.) Small houses were usually connected together, so as to form the continuous sides of streets: they seldom exceeded two stories, and generally consisted only of a ground floor and an upper set of rooms. The houses of the rich citizens "frequently covered a considerable space, and presented to the street either the sides of the house itself, or the walls of the court attached to it. Their plans were regular, the rooms being usually arranged round an open area, or on each side of a long passage, to which an entrance-court led from the street. The court was an empty space, considerably larger than the Roman impluvium, probably paved with stone, or containing a few trees, a small tank, or a fountain in its centre; and sometimes, though rarely, a flight of steps led to the main entrance



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from without. (See *fig.* 101.) A court is frequently common to several houses; and, again, some of the large mansions stood detached, and had the advantage of several doors of entrance, on two or three different sides. They had a portico, or porch, before the front door (janua), supported on two columns, below the capitals of which were attached (see *fig.* 102.) ribands or banners; the name of the person who lived there being occasionally painted within and on the lintel or imposts of the door, as in *fig.* 104.; and sometimes the portico

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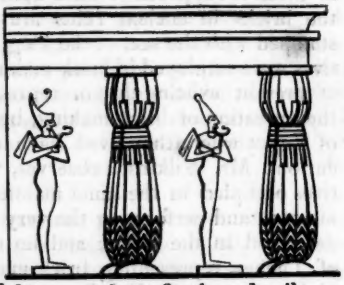
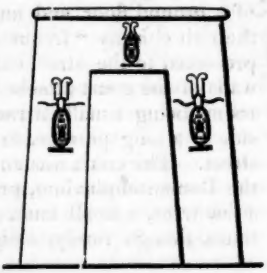
consisted of a double row of columns, between which stood colossal statues of the king. (See *fig.* 103.) A line of trees ran parallel with the front of the house; and, to prevent injuries from cattle or from any accident, the stems were surrounded by a low wall, pierced with square holes to admit the air." — (Vol. ii. p. 103.)

103



We refer to the work itself for a number of other details respecting Egyptian houses, most of which are illustrated by ground plans, elevations, &c.

104



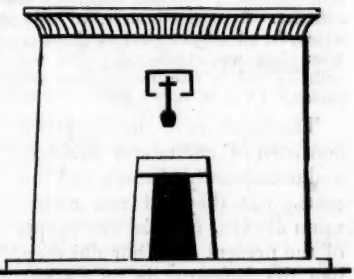
" Some small houses consisted merely of a court, and three or four store-rooms on the ground floor, with a single chamber above, to which a flight of steps led from the court;" resembling some houses still found in *Fellâh* villages of modern Egypt. A model of a house of this kind is now in the British Museum. The chamber on the top appears to have been intended as a shelter from the sun during the day, for the inmate to superintend the business of the servants in the room below. " It cannot, however," says Mr. Wilkinson, " fail to call to mind the memorable proverb, " It is better to dwell in the corner of the house top, than with a brawling woman in a wide house." (*Ibid.*, p. 108.) The resemblance between these houses of Egypt and those of Pompeii will strike every reader who has seen the latter city. The doors of these commoner houses turned on pins, one inserted in the lintel, and the other in the sill; but larger houses had folding doors, with bolts in the centres and cross bars. In many instances, they had wooden locks, which appear to have been opened by keys furnished with several fixed pins, answering to a similar number of pins, that fall down into the hollow movable tongue, into which the key is introduced; a practice common in Egypt in the present day. Formerly, as at present, the locks were occasionally sealed with a mass of clay, for greater security. (p. 111.) The floors of the houses were sometimes of stone, or a composition of lime and other materials; and the roofs of the rooms were supported by rafters of the date tree, arranged close together, or at some distance, and covered with palm branches. Many roofs were vaulted,

and built, like the rest of the house, of crude brick. (p. 116.) There is reason to believe that some roofs, in the larger houses, were arched with stone. "At Sággara, a stone arch still exists of the time of the second Psammeticus, and consequently erected 600 years before our era; nor can any one, who sees the style of its construction, for one moment doubt that the Egyptians had been long accustomed to the erection of stone vaults."

It is highly probable that the small quantity of wood in Egypt, and the consequent expense of this kind of roofing, led to the invention of the arch: it was evidently used in their tombs, as early as the commencement of the 18th dynasty, or about the year 1540 B. C.; and, judging from some of the drawings at Beni Hassan, it seems to have been known in the time of the first Osirtasen, whom Mr. Wilkinson supposes "to have been contemporary with Joseph." (p. 117.)

On the top of larger houses there was frequently a terrace with a roof supported on columns, and open on every side, which served as a place of exercise during the heat of the day, and for sleeping in at night, during the summer season. Sometimes a mosquito net was passed through the columns. Instead of a terrace, a wind conductor was sometimes substituted in the upper chambers; a practice common in the East in the present day. This wind conductor is a funnel formed of boards, with its wide end open to the wind, through which a constant stream passed down to the apartment.* In smaller houses, reeds or mats, covered with stucco, protected and supported by wooden rafters, supply the place of boards in the construction of the mulgufs of modern Egypt. Some houses had a tower, and in others the roof was surrounded with a row of battlements, as in *fig.* 106. "Besides the owner's name, they sometimes wrote a lucky sentence over the entrance of the house, for a favourable omen. (See *fig.* 105.) The lintels and imposts of the doors in royal mansions were frequently covered with hieroglyphics." (p. 124.)

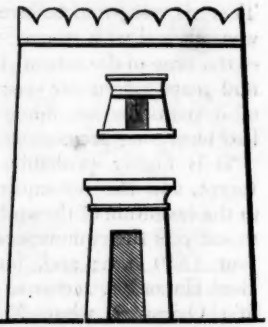
105



* Some contrivance of this kind (the air, in winter, to be forced over a heated surface, or through hot water; and, in summer, through cold underground flues, or through cold water) will probably ultimately be resorted to in this country, when open fireplaces give way to close stoves, such as those of Arnott. As the wind, however, does not blow with much force more than half the number of days in a year, there would require to be some description of machinery to impel a fan in calm weather.

The walls and the ceilings of the houses were richly painted, as were the sculptures on the walls of the temples, and all the architectural details; a practice common to the Egyptians, the Etrurians, and the Greeks. (See vol. iii. p. 298.)

106



"It sometimes happened that the columns were merely covered with white stucco, without any ornament, and even within the usual line of hieroglyphics; and the same custom of coating certain kinds of stone with stucco was common in Greece. The Egyptians always put this layer of stucco, or paint, over stone, whatever its quality might be; and we are surprised to find the beautiful granite of obelisks and other monuments concealed in a similar manner; the sculptures engraved upon them being also tinted either green, blue, red, or other colour, and frequently one and the same throughout.

"Whenever they employed sandstone, it was absolutely necessary to cover it with a surface of a smoother and less absorbent nature, to prevent the colour being too readily imbibed by so porous a stone; and a coat of calcareous composition was laid on before the paint was applied. When the subject was sculptured, either in relief or intaglio, the stone was coated, after the figures were cut, with the same substance, to receive the final colouring; and it had the additional advantage of enabling the artist to finish the figures and other objects with a precision and delicacy in vain to be expected on the rough and absorbent surface of sandstone.

"The Egyptians mixed their paint with water; and it is probable that a little portion of gum was sometimes added to render it more tenacious and adhesive. In most instances, we find red, green, and blue adopted; a union which, for all subjects, and in all parts of Egypt, was a particular favourite: when black was introduced, yellow was added, to counteract or harmonise with it; and, in like manner, they sought for every hue its congenial companion." (Vol. iii. p. 301.)

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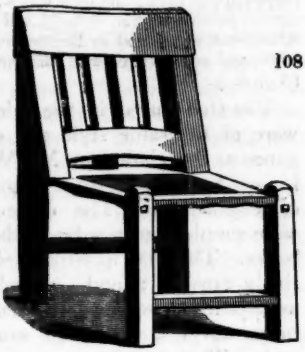
The furniture of the Egyptians consisted of chairs and fauteuils, and occasionally of stools and low seats; but they did not recline upon diwáns, like Eastern people of the present day; nor did they, like the Romans, lie on a couch during meals; though couches and ottomans formed part of the furniture of the Egyptian saloon. They had double chairs for two persons, like the Greeks, and single chairs. *Fig.* 107. is one of the latter, from a painting in Thebes. *Figs.* 108. and 109. are chairs of an ordinary description. The seat of the lowest is only 8 in. high; the back, 1 ft. 4 in.; and the total height,

2 ft. 6 in. The fauteuils were of a most elegant form, made of ebony and other rare woods, inlaid with ivory, covered with rich stuffs, and very similar to some now used in Europe, to which, indeed, they very frequently served as models. In proof of this, we may refer to Hope's work on furniture, and a corresponding work, published in Paris by Percier and Lafontaine. The expression endeavoured to be put in the feet of some of the chairs is worthy of notice, as in *fig.* 110. In the sculptures, a great variety of seats are exhibited, including camp-stools (*fig.* 111.), with or without pillows, and sometimes furnished with a leopard's skin, which is thrown over it when the chair is to be used, and removed when it is to be folded up. The seats of the chairs are frequently of leather painted, sometimes of cloth, and occasionally of network like our Indian cane chairs. Most of these seats were of the "ordinary height of those now used in Europe; the seat being nearly in a line with the bend of the knee; but some were very low, and others offered that variety of position which we seek in the kangaroo chairs of our own drawingrooms." (See *fig.* 113.)



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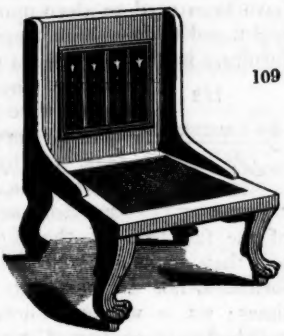

109

"The ordinary fashion of the legs was in imitation of those of some wild animal, as the lion, or the goat, but more usually the former; the foot raised and supported on a short pin, as in *fig.* 112.; and what is remarkable, the skill of their cabinet-makers, even in the early era of Joseph, had already done away with the necessity of uniting the legs with bars. Stools, however, and, more rarely, chairs, were occasionally made with these strengthening members, as is still the case in our own country; but the form of the drawingroom fauteuil and of the couch was not degraded by so unseemly and so unskilful a support. The back of the chair was equally light and strong. It was occasionally concave, like some Roman chairs, or the throne of Solomon, and in many of the large fauteuils a lion formed an arm at either side; but the back usually consisted of a single set of upright and cross bars, or of a frame, receding gradually, and terminating at its summit in a graceful curve, supported from without by

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perpendicular bars; and over this was thrown a handsome pillow of coloured cotton, painted leather, or gold and silver tissue, like the beds at the feast of Ahasuerus, mentioned in Esther; or like the feather cushions covered with stuffs, and embroidered with silk threads of gold, in the palace of Scaurus." (Vol. ii. p. 196.)

The stools used in the saloon were of the same style and elegance as the chairs, as Mr. Wilkinson has shown by a number of engravings. The ottomans were simple square sofas, without backs. They had footstools, also, richly covered; and, probably, as appears by some of the sculptures, carpets, or at all events mats. Their couches were sometimes lofty, and were ascended to by steps. They appear to have been used to sleep upon at night, and to have been transformed to an ornamental piece of furniture in the daytime; a practice common in the East in the present day. The Egyptian tables were round, square, or oblong, supported by several legs, or by one leg in the centre, like the *monopodium* of the Romans. Little is known of the furniture of the Egyptian bed-rooms; but they contained one remarkable piece of furniture, not in use any where in modern times; viz. a wooden pillow, formed of a half cylinder of well-polished wood, supported by a shaft, as in *fig.* 114. Their bedsteads were made of wickerwork, having the external appearance of a paillasse, and were used by the priests and by the middle and lower classes, with or without different descriptions of bed-furniture. They had wooden, and probably also bronze, bedsteads.

111

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The "carpenters and cabinet-makers were a very numerous class of workmen, and their occupations generally form one of the most important subjects in the paintings which represent the Egyptian trades." (Vol iii. p. 167.) The wood most generally employed was that of the Egyptian sycamore (*Ficus Sycómorus L.*), the date and dôm palms, the tamarisk, and some species of *Acàcia* or Mimòsa, more especially the Mimòsa nilótica *L.* (*Acàcia vèra Willd.*), of which there are large groves

still existing in the neighbourhood of Memphis and Abydos. The pods of this tree are used in tanning, and the gum is the gum Arabic of the shops. Both the ancient Egyptian and the modern Arabic name of this tree is *saul*. Many foreign woods were imported by the Egyptians, including deal and cedar from Syria; and ebony and other rare woods from Ethiopia, and various parts of Asia and Africa.

The principal tools made use of by the Egyptian carpenter were the more important of those in use in the present day; such as the axe, adze, handsaw, chisel, drill, planes of different sorts, files, ruler, plummet, right angle, &c. They understood dovetailing and tonguing, and also the union of boards by pins inserted in their edges.

We have already gone so much further than we originally intended in this work, that we must abruptly leave off, and recommend the volumes themselves to every architect who has any pretensions to be considered a man of taste. He will not only find them afford agreeable and instructive professional reading, but that they may be recurred to for ideas in designing furniture, and, again and again, as a work of entertainment, and, in short, of intense antiquarian interest.

ART. II. *An Historical Essay on Architecture.* By the late Thomas Hope. Illustrated from drawings made by him in Italy and Germany. Royal 8vo, 2d edition. London, 1835.

(*Continued from* p. 173.)

CHAP. XXVI. *Private defensive Architecture of the Ninth and Tenth Centuries.*

"It seems unfortunate, but it is not the less true, that the first rise and developement of Christianity, and the first general decline of arts, sciences, and civilisation, went almost hand in hand. About the close of the ninth century, besides devout exercises, there seemed to be no other business in the world but warfare. Every vassal was in open rebellion against his sovereign; every lord in constant hostility with all his neighbours. The country was infested by outlaws and plunderers; the towns distracted by contending factions. Nothing but its acknowledged holiness could protect any place, not fortified, against every species of violence and rapine. Every edifice, which was not a church, had no choice but to become a castle: not only insulated dwellings in the country, not only cities collectively, were fortified against attacks from without, but, in the very heart of those cities, men of property dared not go about the streets without being attended by an armed force; and fitted their habitations for standing a siege from their fellow-citizens. As in the country, a castle, so in every Italian city, a tower, became a badge of nobility. Even churches were sometimes fortified like citadels: that which, at Loretto, has been built over the Holy House seems to form part of the city bulwarks over which it soars.

"I need scarcely say, that if, in the architecture of churches and monasteries, ornament was sought, in these habitations, exposed to constant sieges, it was avoided, not only as in itself too delicate for the rough usage it might ex-

perience, but as calculated to render them too accessible. Except some loophole through which to pass a crossbow, or other offensive weapon, to a considerable height from the ground, all external projections to which a man might attach himself, all apertures through which he might effect a passage (save the low, small, intricate, well-guarded entrance), were carefully avoided: every where was a smooth even surface, only broken by the towers necessary, not only to watch with more effect the movements in the country around, but under the walls of the castle itself. The top of the edifice alone was fringed all round by immense brackets, supporting a projecting ledge, with perforations in its floor, through which stones might be dropped upon and made to harass the assailants at the foot of the wall, and encircled by battlements, behind which the defendants might, with safety to themselves, take aim at and send forth their arrows against the besiegers.

Chap. XXVII. *Lombard Civil Architecture.* The ground floor of the town halls consisted in an open portico, where venders of small wares took up their stations, and above which were rooms with ample windows, as in the Doge's Palace at Venice, the Palazzo Publico at Pavia, &c.

Chap. XXVIII. *Allegorical and other ornamental Additions to Lombard Architecture.* The architects of the Greek churches ornamented them by colour, and those of the Latin churches by sculpture, which is found in the Lombard churches in profusion.

Chap. XXIX. *On the Use of Brick.* Brick seems to be used in all alluvial countries, and very generally in Lombardy. The following excellent note on the subject of brick, the editor tells us, is extracted from a MS. work of the author:—

"The ancient Greeks seem every where in their mother country, and their different later colonies to have found stone too plentifully to make great use of brick, though a few remains of terra-cotta cornices have been found in Greece, as well as terra-cotta vases and bas reliefs.

"The ancient Romans, wherever they found clay more abundant or easier to work than stone, used it plentifully, both in regular layers throughout the body of walls, as we do, and in an external reticulated coating, from the fineness of its texture and the firmness of its joints as durable as stone itself. Indeed, far from considering brick only as a material fit for the coarsest and most indispensable groundwork of architecture, they regarded it as equally fit for all the elegancies of ornamental form; all the details of rich architraves, capitals, friezes, cornices, and other embellishments. Sometimes it owed to the mould its various forms, and at others, as in the Amphitheatrum Castrense, and the temple of the god Ridiculus, to the chisel.

"In modern Rome, too, very great use was made, until very late periods of brick. Of the famous Farnese palace, begun by Bramante and finished by Michael Angelo, the plain surfaces are of brick, so fine in its texture and so neat in its joints, that by the superficial observer it is generally taken for stone. The balustrades, the entablatures, and other raised parts, were cut out of the quarry afforded by the Coliseum. In the plains of Lombardy, where stone is rare, clay has, in buildings of importance, been moulded into forms so exquisite, as to have been raised into a material of value and dignity. In the ancient churches of Pavia, &c., it presents itself in all the delicate tracery of the middle ages; in the great Hospital, Campo Santo and Castiglione Palace, at Milan, it exhibits the arabesque, medallions, and scroll-work of the cinque-cento style. On this side of the Alps, clay has never received forms quite so elaborate; still, in the south of France, particularly at Tou-

louse, remarble instances exist. Along the Rhone carved tiles are formed into very elegant cornices and balustrades. Even in England brick was in former days moulded into forms intended to be handsome. But, whether in consequence of the high duty imposed upon brick, and the consequent limitation as to size and shape, or from the influence of the contracting system of building, the legal English brick has become the least durable, and the most unsightly, of that used in any country; and has hence produced that dislike to its colour and material, which proceeds, not from its intrinsic ugliness, but from association of the imagination with ideas of coarseness and meanness of construction.

Chap. xxx. *Doors of Churches.* Among numerous short chapters, this is the shortest, consisting only of three sentences, and two of these very short. We mention this, lest our readers should be at a loss to account for our brevity in some instances, and length in others. Very few original doors of ancient churches exist; but there is one or two at Rome, and one at San Zeno at Verona.

Chap. xxxi. *A List of Churches in the Lombard Style which possess remarkable Features, on the Continent.* This list extends to a great number of towns in Italy, France, and Germany, and to some in England. The greater number of the plates by which the work is illustrated are elevations or views of the more remarkable churches named.

Chap. xxxii. *Some Account of the Characteristics of the pointed Style, and its universal Adoption accounted for by its peculiar Qualities.* Here the Gothic style is ably and elegantly depicted; but, after having, in preceding articles, given Dr. Anderson's *Essays on this Style*, we shall confine ourselves to a short extract from Mr. Hope's characteristics of it.

"Those bold horizontal projections of entablatures and cornices, which, in the pure Grecian architecture, produced such play of upright outlines, and such masses of transverse shadows, had become in a great measure obliterated in the rounded Lombard buildings; but in this new pointed style, the few members, and fasciæ, and mouldings, and other parts still permitted to retain that horizontal and transverse position, which the whole system tended to obliterate, if external, were for the purpose of avoiding all lodgment of snow, and, if internal, for that of obviating all unnecessary weight and pressure, made in their projection as shallow and in their superior surface as much inclining downwards, as possible: and, to crown all, in those edifices in which the system was carried to its utmost consistency and completion, the roof, for the high pitch of which all the parts underneath were calculated, was made as steep and sharp as all the supporting members.

"As the habit of gazing on peculiar forms by degrees begets a taste for them, and as those which utility first demands, even when that utility ceases, still are perpetuated by the inclination it produces; as even consistency and taste require the ornamental additions to harmonise in their outline and character with the fundamental groundwork, those essential forms, all slender, and tall, and sharp; those long thin pillars; those narrow and lofty interstices; those pointed arches, reduplicated laterally and over each other in endless repetitions, and intersecting each other in every way, were imitated and repeated, and carried to interminable, lesser, and more minute subdivisions in the mere ornamental parts, until at last, religious edifices, with their pinnacles, and spires, and broaches, and cusps, and corbels, and tabernacles, and

tracery, and ridge-bands, looked like a mass of network, or rather a cluster of mere conductors.

"As, in the seclusion of convents, mathematical science and mechanical combinations may advance, while art, especially of that sort which imitates and recombines the productions of nature, must experience an opposite and retrograde movement, not only the elegant arabesques and interlacings which the Lombard style still retained from the antique, which was little suited to the meagre upright angular framings of the new style, were discarded: but even where the foundation, or history of the edifices, required for its illustration, in the porches or other parts of the front, representations of single human figures on a large scale; these figures, in order that they might be squeezed into the narrow bays and niches left between the pillars and mullions, were made so thin and wiredrawn, as to look like ghosts, or skeletons, or monsters; witness those in the porches of Rheims, Paris, or Chartres cathedrals; until, from the universal shaping of every part, this style of architecture seemed to admit of no exclusive appellation more appropriate and more descriptive of its grand general characteristic, than that of pointed; however much, in process of time, it was influenced by that common tendency of all human things, after they have laboriously reached their apex, again to decline on the reverse side; and after having attained the greatest sharpness, at last, as if weak with old age and sinking, it exhibited a depression in its arches, and even a bulging downwards in the form of pendants, ere it was completely overthrown and dissolved."

(*To be continued.*)

ART. III. *Selections and Fragments of the Architecture of the Middle Ages; drawn from Nature and on Stone.* By Joseph Nash. Imperial folio.

THIS work comprises twenty-five of the most picturesque and interesting subjects, taken from various buildings, ecclesiastical and domestic, in England and on the Continent. Every one at all acquainted with architectural sketches is aware of the unrivalled excellence which Mr. Nash has attained in this department of art. These drawings, which are executed in a new and broad manner, technically called Hullmandell's new stump style, promise to form the most magnificent publication with which Mr. Nash's name is connected. We state this, having before us three specimen plates; viz., the south porch of Louvier's Normandy; the staircase in St. Maclou, Rouen; and the screen in St. Jacques, Dieppe.

ART. IV. *Entwurf zur Boerse auf dem Adolphs-Platze in Hamburg.* Von A. de Châteauneuf. *Design for an Exchange adapted for Adolph's Square, Hamburg,* &c. Folio, 3 plates. Berlin, 1838.

OUR readers may recollect a notice published in our Fourth Volume, p. 149., respecting competition designs for building a new Exchange in Hamburg, the conditions of which were protested against by some of the principal architects of Germany. The design now published by M. Châteauneuf was made for the situation; but, instead of being given in in competition, it

has been published by its author for his own gratification. The design is quite original, and, as the author has shown by his reasons for it, admirably adapted to the situation; but we shall not enter farther into the subject here, because we have translated the whole of the letterpress, and intend to give it, along with some copies of the engravings, in a future Number of this Magazine.

ART. V. *Catalogue of Works on Architecture, Building, and Furnishing, and on the Arts more immediately connected therewith, recently published.*

THE Plumber's, Painter's, Glazier's, House-Decorator's, &c., Pocket Director: comprehending select and useful Prices of the various Works in their respective Departments; including also a Variety of Information of practical Utility; with a copious List of the Trade. By John Bennett, Engineer, &c.

Considering the small quantity of matter in this little volume, it is certainly too dear.

Letter to His Grace the Duke of Hamilton, and the other Noblemen and Gentlemen, the Committee appointed by the Subscribers for a Monument in Edinburgh to the Memory of Sir Walter Scott. By Robert Cadell. Pamph. 8vo, 20 pages.

There appears to be a great diversity of taste among the citizens of Edinburgh on the subject of a proposed monument to Sir Walter Scott. We do not like the spirit of this pamphlet, in which the subject is not reasoned, but treated with a sort of party feeling and apparent illiberality, not, as we think, very creditable to its author. The design which gained the prize was produced by a carpenter; and it is objected to by the author of the pamphlet, among other reasons, because it emanates "from one unheard of as professional, and who can adduce no specimen of what he has done in architecture, not even the erection of a cow-house." Yet this design by the "unheard of" carpenter (Mr. Kemp), the author of the pamphlet subsequently acknowledges, was stated by Mr. BURN, "who ranks so deservedly high in his profession," to be the "best he had seen of the proposed monuments for Sir Walter Scott;" Mr. Burn adding that he thought "a Gothic erection was infinitely superior to anything Grecian." (p. 8.)

George Kemp, who sent in his design under the fictitious name of "John Morvo," is the son of a shepherd. He was put apprentice to a joiner near Edinburgh, and afterwards worked his way through England, and, in 1824, through a great part of France. Actuated solely by his wish of studying the beauties of the Gothic cathedrals in the countries he passed through.

Mr. Kemp is now employed in making drawings for a splendid work to be published at Edinburgh on the ancient Gothic buildings of Scotland, something in the manner of Britton's *Cathedral Antiquities.* Having had these advantages, Mr. Kemp, it will be evident, was as likely to produce an eligible design as any professional person whatever; and it is therefore in no way derogatory to the taste or judgment of the committee that they gave the journeyman carpenter the preference to the "professional" architects.

ART. VI. *Engravings.*

DESIGN for the new Exchange Buildings, Manchester. By T. Taylor, Architect.

Perhaps we shall be considered as fastidious when we say that we do not like this design: it is, in our opinion, without appropriate character. We have not seen the ground plan or any sections; but the perspective view before us shows two sides, in the centre of each of which there is a portico with a pediment mounted on an arcade; and at each of the angles there are smaller porticoes, without pediments. In the centre there is a lofty dome supported on columns. There is nothing in all this, or in the windows, to indicate the large room, which is the characteristic feature of an exchange, and nothing, in short, to assist us in conjecturing what it is.

A prospectus sent along with the drawing informs us that Mr. Taylor's plan "comprises an exchange (capable of accommodating 2000 persons), reading-rooms, post-office, chamber of commerce, Lloyd's rooms, brokers' offices, concert hall (sufficiently large for the festivals, and capable of contraction for smaller assemblages), library, exhibition and auction rooms, and having a large open area in the centre, with an arcade surrounding it. The basement would be well adapted for a coffee-room, or other purposes. The plans are so arranged, that, should the brokers' offices and Lloyd's rooms be considered unnecessary, a large hotel could be substituted, which would yield a good return for the money expended in its construction."

The Interior of the Chapter Room in the Cathedral of Bristol. By John Willis.

A lithographic print, chiefly remarkable as exhibiting intersecting circular arches, which, according to some, gave rise to the pointed arch.

Blaise Hamlet. Published by Davy, Bristol.

Nine picturesque views of cottages on one plate, exhibiting considerable variety of outline. They are built round an open

green; and the designs were chiefly by the late Mr. Nash. They were built by the proprietor of Blaise Castle; and, while they form an ornament to his grounds, supply comfortable residences to his workmen. In 1816, when we last saw them, they were chiefly occupied by widows and decayed persons.

Henbury Cottages. Published by O. C. Lane, Clifton.

The Blaise cottages seen in groups, and forming very picturesque little pictures.

The Victoria Rooms, Bristol. Designed by S. G. Tovy, Bristol, and printed from wood by Messrs. Whitehead and Co., London.

This building is to contain a hall 115 ft. long by 55 ft. wide, and 46 ft. high. The entrance is by an immense portico supported by eight Corinthian columns; but, not having seen the plan, we cannot form an opinion as to its suitableness for the end in view; nor should we feel justified, from the perspective view before us, in repeating the praises of the *Bristol Mirror*, which finds this structure combining elegance with solidity.

Plan of the Gloucestershire Zoological, Botanical, and Horticultural Gardens, in the Park, Cheltenham. Designed by T. Billings. 1836.

On the supposition that the ground is perfectly flat, we should object to this design, that it is without a leading walk for making a general tour of the grounds. The walks are too like the trunks and ramifications of trees; and, with the exception of the central straight walk, there is not another on which a party could walk 100 yards without meeting with some kind of interruption, by the walk becoming suddenly narrower, or by some obstruction of a similar nature. However, as it would require a plan to point out clearly what we mean, we shall here make no further comment.

MISCELLANEOUS INTELLIGENCE.

Art. I. *General Notices.*

What is Art? — Art is that process by which we give to natural materials the highest excellence they are capable of receiving.

We estimate the artist, not only in proportion to the success of his labours, but in proportion to the intellectual faculties which are necessary to that success. Thus, a watch by Breguet is a beautiful work of art, and so is a tragedy by Sophocles: the first is even more perfect of its kind than the last; but the tragedy requires higher intellectual faculties than the watch; and we esteem the tragedian above the watchmaker.

The excellence of art consists in the fitness of the object proposed with the means adopted. Art, carried to its perfection, would be the union of the most admirable object with the most admirable means; in other words, it would

require a greatness in the conception correspondent to the genius in the execution. But, as mechanical art is subjected to more definite and rigorous laws than intellectual art, so, in the latter, a comprehensive critic regards the symmetry of the whole with large indulgence towards blemishes in detail. We contemplate mechanical art with reference to its utility; intellectual art, with reference to its beauty. A single defect in a watch may suffice to destroy all the value of its construction; a single blemish in a tragedy may scarcely detract from its effect.

In regarding any work of art, we must first thoroughly acquaint ourselves with the object which the artist had in view. Were an antiquarian to set before us a drawing illustrative of the costume of the Jews in the time of Tiberius, we should do right to blame him if he presented to our eye goblets in the fashion of the fifteenth century; but when Leonardo da Vinci undertook the sublime and moving representation of the Last Supper, we feel that his object is not that of an antiquary; and we do not regard it as a blemish that the apostles are seated upright instead of being recumbent, and that the loaves of bread are those of an Italian baker. Perhaps, indeed, the picture affected the spectators the more sensibly from their familiarity with the details; and the effect of the art on the whole was only heightened by a departure from correctness in minutiæ. So, in an anatomical drawing that professed to give the exact proportions of man, we might censure the designer, if the length of the limbs were disproportioned to the size of the trunk: but when the sculptor of the Apollo Belvedere desired to convey to the human eye the ideal of the God of Youth, the length of the limbs contributed to give an additional and superhuman lightness and elasticity to the form; and the excellence of the art was evinced and promoted by the sacrifice of mechanical accuracy in detail. It follows, therefore, that intellectual art and technical correctness are far from identical; that one is sometimes proved by the disdain of the other. And, as this makes the distinction between mechanical and intellectual art, so is the distinction remarkable in proportion as that intellectual art is exercised in the highest degree, in proportion as it realises the ideal; for the ideal consists not in the imitation, but the exaltation, of Nature; and we must accordingly enquire, not how far it resembles what we have seen, so much as how far it embodies what we can imagine.

It is not till we have had great pictures that we can lay down the rules of painting: it is not till we have had great writers in a particular department of intellect that we can sketch forth a code of laws for those who succeed them. For the theory of art resembles that of science: we must have data to proceed upon, and our inductions must be drawn from a vast store of experiments. (*Monthly Chronicle*, p. 43.)

Effect of Ornament according to its Disposition. — We do not dispute that, if minute ornaments or other parts are merely introduced in patches, they impart a littleness to what, but for them, might be grand; yet we also strenuously contend that, when spread over a vast extent of surface, and made to constitute ample masses, they become, as it were, the foliage of a majestic tree, and convey the idea of grandeur, power, and sublimity. In the Arabian style, as exemplified in the halls of Alhambra, the very multiplicity and excess of embellishment contribute to simplicity; the effect is one, undivided and impressive. We may note particulars afterwards, as leisurely as we please; but the first glance enables us to recognise the entire scheme; a scheme grasping countless myriads of forms, and uniting them into one perfectly methodised whole. The eye may be intoxicated by the light, but is, correctly speaking, no more bewildered than it would be by beholding an extensive prospect.

What, applied singly or sparingly, would be little, by force of numbers, like the leaves which go to make up the foliage of a widely spreading tree, becomes grand. Such an assemblage of parts, minute, perhaps trivial, in themselves, becomes a vast collected host, and carries with it an impression of infinity. The eye is neither wearied nor sated, because the spectator is left at liberty, either passively to enjoy the single impression resulting from such diversity and com-

plexity of parts, or to bestow his attention on any of the other circumstances and beauties which invite to examination. (*Printing Machine*, p. 126.)

Gothic Architecture according to Frederick Schlegel.—The taste of the middle ages, particularly in Germany, is nowhere so completely displayed as in those buildings that are built in what is called the Gothic style of architecture, the origin of which is not, however, properly known. It is now acknowledged that it did not arise among the Goths, but appeared much later, without variation, and all at once tolerably perfect. I speak of that style of architecture in Christendom, with its lofty ailes and arches, with its groups of pillars like bundles of reeds, its abundant leafy decorations, its ornaments of flowers and leaves sufficiently distinguished, which is totally different from that ancient style of architecture which is built in the modern Greek taste, from the model of the church of Sophia at Constantinople. There is very little or nothing of the Moorish style in it. Buildings in the Moorish style, in Sicily and Spain, have a very different character. Gothic buildings were found in the East, but they were built by Christians: they were fortresses and churches of knights templars, and the knights of St. John. This peculiar style of architecture was at its height in the twelfth, thirteenth, and fourteenth centuries. It flourished most in Germany, and from it the Germans formed the idea of the dome at Milan, which they erected to the no small astonishment of the Italians. But it not only flourished in high and low Germany, but even in England, and in the north-western parts of France. The invention of this style is unknown: it could not have been only one great architect, as his name would have been preserved. Those who planned such wonderful works seem rather to have belonged to a society composed of a certain number of members. Whoever they may have been, they have not merely heaped stones one on the other, but in their performances have left impressions of their exalted ideas. If such a magnificent building have no signification, it cannot be said to belong to this beautiful art. This ancient and most exalted of all the arts does not produce immediate excitement of the feelings. It is only from its meaning that it can produce a certain impression on the mind, and it is therefore sure to give rise to a lofty feeling of a very peculiar kind. All kinds of architecture are therefore symbolical, particularly those used by the Christians during the middle ages in Germany. The first and chief expression is that of the thoughts raised to God, and, separated from the earth, ascending boldly and straightly to Heaven. This is what every one must feel on contemplating the aspiring pillars, arches, and vaults, even if we cannot analyse this feeling. All the other parts of the whole are symbolical and significant, as many traces and proofs of it are to be found in the writings of those times. The altar was placed opposite the rising sun; the three principal entrances to receive the crowds of people from the different parts of the world. The three towers express the three persons of the mystery of the Godhead, according to the Christian belief. The choir raises itself, like a temple within a temple, with exalted dignity. The figure of the cross was used in the Christian churches from the remotest times, not merely arbitrarily, as it may be supposed, or that it should be considered as an object merely to attract the eye from the other beautiful forms, as all the selected forms (according with each other) form a complete whole. Round pillars were soon laid aside in Christian architecture; and, as it was found that three or four of such pillars, when placed close together, produced no good effect, they preferred those that were slender, like bundles of rods placed together, high aspiring light pillars, in all the plenitude of fulness and unity. The rose is the principal feature of all the ornaments of this style of architecture. The peculiar form of the windows, doors, and towers is derived from it, also the rich decorations of leaves and flowers. The cross and the rose are therefore the chief forms and symbols of this symbolical style of architecture. The expression of the whole is the solemnity of eternity, the thoughts of earthly death interwoven by the most enchanting plenitude of a life of perpetual bloom. (*Crelle's Baukunst.*)

Composition for rendering Buildings Fire-proof. — In a preceding Number (p. 85.), we noticed an experiment which had been made with this composition, at White Conduit House, in November, 1837; and, on June 6., we attended, by invitation, to witness another in Dorset Street, Clapham Road. The composition is of a greyish colour, and appears to consist of a metallic oxide, mixed with finely powdered flint glass. The house in which the experiment was tried was purposely left unfinished, without window-sashes, and with the walls bare; but the bond timber and stud-work of the partitions were, on this account, only the more exposed to the fire. These, and all the rest of the wood-work, were covered over with the composition, to the depth of, perhaps, the eighth of an inch; as was the entire surface of the ceilings, over which a coating of common plaster was laid. Some furniture was placed in the rooms, and the window openings were covered with wirework, to prevent the burning fuel from being blown out. The house consisted of six small rooms, which were fired one after the other; and in one, in particular, where there was an old carpenter's bench on fire, the heat was intense. The experiment may be considered as having terminated quite satisfactorily; the difficulty, however, concerning fire-proof buildings does not consist in devising a plan, but in getting persons to adopt it. One thing in favour of this composition is, that it becomes very hard when set, and takes a polish equal to that of the finest marble. — *Cond.*

Noxious Effluvia, and all kinds of atmospheric poisons, have lately been neutralised or destroyed by the evolution of chlorine gas, in a safe and expeditious manner, by a machine invented by a Mr. Watt. It has been tried in the presence of Mr. Faraday and Dr. Birkbeck. — *Cond.*

A general Slaughterhouse, to be erected near Smithfield, in which all the cattle brought to London should be killed, and, when this was done, they should be carried to their several owners, was proposed in the *Gentleman's Magazine*, so early as 1761, and even, as the editor tells us, frequently before. The magistrates, he says, were at that time considering how they might remedy the loss of life occasioned by the brutal behaviour of the cattle drivers. (*Gent. Mag.*, vol. xxxi. p. 205.)

Art. II. *Foreign Notices.*

NORWAY.

Dwellings of the Rural Population in Norway, as compared with those of Britain and Ireland. — The dwelling-houses of the meanest labourers in Norway are divided into several apartments, have wooden floors, and a sufficient number of good windows; also, some kind of outhouses for cattle and lumber. Whoever has observed the condition of our labouring population, will admit the influence of good habitations upon the moral habits of a people. The natives of New Zealand have dwellings more suited to the feelings and decencies of civilised life, than the peasantry of a great proportion of Great Britain and Ireland, who live in dark one-room hovels, in which not only household comfort and cleanliness are out of the question, but the proper separation of the sexes can scarcely be maintained. Can any reflecting person doubt that it is an important advantage to the labouring class of a country, that their standard of living is pitched high, as to lodging, food, and clothing? It is the most effective check on pauperism, and overpopulation. Why does the Irish peasant marry so recklessly? Because his idea of a suitable dwelling for a man in his station is a hovel of raw earth and sticks, such as a man may put up in a forenoon on a hill side; a bucketful of potatoes is his standard food; a tattered great coat his raiment. With these, he is in no worse condition than the population around him, and therefore he marries. If the ideas and habits of the country required a more expensive and comfortable sort of habitation for the very meanest person of his own station, he would not marry, until he had acquired the means of lodging like

his neighbours; nor would he find a wife who would leave a decent habitation to burrow in a hole like a pigsty. (*Laing's Journ. of a Residence in Norway during* 1834-5-6; as quoted in the *Morn. Chron.*, Sept. 7. 1836.)

WALLACHIA.

A Wallachian village is the *ne plus ultra* of disgusting dirtiness and wretchedness, consisting of holes dug in the earth, over which a propped-up roof is thrown, covered rarely with straw, generally with turf. I never ventured into a peasant's dwelling. At the several stages I stopped at, I sometimes got out of the vehicle to enter the posting-house (generally the best house of the village), the interior of which I therefore know from personal inspection. Through a rough kind of door, I crept, stooping, down an excavation of some feet into the ground, the floor of which was neither paved nor boarded, but merely hardened by stamping. Above, were the rafters of the dwelling, in which an aperture covered with a pig's bladder represented the window. An angle of the space below served for the hearth, around which several postilions squatted in the manner of the Turks, smoking tobacco, and warming themselves by the fire. The smoke endeavoured to find vent at the sieve-like roof. There was no furniture visible. Along the wall ran a low, broad wooden stool, covered with a rush mat, which composed the trinity of bed, table, and seat; the postmaster (as dirty a fellow as his men), in Turkish costume, placed himself with crossed legs hereupon, drew writing apparatus from his girdle, with a pen cut from a reed, and scratched his necessary remarks in the dirty posting book. To get provisions in such a village is not only difficult, but almost impossible. (*St. Petersburg, Constantinople, and Napoli di Romania, in* 1833 *and* 1834; *by M. Von Tietz, Prussian Counsellor of Legation:* as quoted in the *Athenæum* for Aug. 13.)

NORTH AMERICA.

Philadelphia, April 17. 1838. — Dear Sir, I have taken the liberty to send you my several annual reports on the Girard College for Orphans, the proceedings on laying the corner-stone, the will and biography of Mr. Girard, and the public documents relating to the new treasury buildings at Washington, district of Columbia.

The annual reports are mere matter of form, and embrace very little information beyond an account of the expenditures. In the last report, however, you will find an experiment of some interest on the expansibility of iron embedded in walls. The account of the proceedings on laying the corner stone of the college embraces an elegant address delivered on the occasion by Mr. Biddle, the president of the United States Bank; also, an architectural description of the plan of the main building.

The pleasure I derive from the perusal of your interesting Magazine has prompted me to make thus free to address you. The high professional character that you have given to this excellent work affords peculiar gratification to your professional readers, while the pleasing variety that adorns its pages makes it one of the most agreeable journals of the day, to all classes of society.

Architecture, above all other professions, needs a work like this. The true source of the carelessness with which this, the noblest of all the arts of polished life, has been treated, is to be found in the want of a cultivation of the public taste. If the mass of the people were generally well informed on the subject of architecture, assuming pretenders would be frowned into oblivion, true genius would be fostered, and the nations would look to their architects, and not to their arms, for the means of handing down to ages yet unborn the story of their power and greatness.

Hence, it becomes the duty of the profession not only to elevate the standard of their art amongst themselves, but to take measures to impart such general information on the subject to the people as shall enable *them* to appreciate the works of architects, and to discriminate between the tasteful

and philosophical compositions of those who bring their mental energies to the work, and the crude and often gorgeous deformities of those who are governed by whim and caprice, and who are led altogether by impulse and accident.

No better means could possibly have been devised to accomplish so desirable an end, than the establishment of the *Architectural Magazine*. It now only remains for architects to make good use of it amongst their patrons, and the profession will naturally assume the elevated rank that belongs to it; while the brainless bunglers that now hang about it like a nightmare will sink away before the scrutinising eye of an enlightened people. — *T. N. Walter.*

[We are much gratified to find that the *Architectural Magazine*, and the object which we have in view in conducting that periodical, are duly appreciated in America. We have received all the books so kindly presented to us by our correspondent, and shall notice them duly on an early occasion. The duplicates we have, as requested, sent to the Institute. We shall be happy to hear from Mr. Walter as often as he has anything to communicate, and can find leisure to commit it to paper. — *Cond.*]

Art. III. *Domestic Notices.*

ENGLAND.

The Squares of London. — The squares are another peculiarity of London. These are large open spaces, surrounded with houses, the centre being laid out as a garden, with grass-plots and parterres of flowers, shrubs, &c. These gardens, enclosed by iron railings, are kept in perfect order at the expense of the inhabitants of the squares, who alone have the use of them. Two of the principal, both for extent and the surrounding houses, are, Grosvenor Square and Belgrave Square, the last of which has been but lately built. Each of the four sides of this square is formed by a colossal edifice, which, on closer inspection, is found to consist of several distinct houses, which are only united architecturally in one mass. Such buildings are usually erected by one person, and by him let out; and are therefore in every respect similar to the buildings in ancient Rome, which were called islands. This method is resorted to in order to have grand masses of building worthy of such a city; an object which can scarcely be attained by the erection of single houses. Great buildings of this kind have, however, always one defect, which is, that the several divisions, the stories, doors, and windows, cannot be made in proportion to the entire mass, but must be accommodated to suit the separate habitations; by which they are made too small, and the whole easily assumes a barrack-like appearance. Seen at a distance, however, they have a good effect, as is proved by the terraces that bound some parts of the Regent's Park. These colossal proportions have been very judiciously chosen here, because, with the great extent of the park, even considerable buildings would be lost." — (*Waagen on Art and Artists in England*; as quoted in the *Athenæum*, Nov. 4. 1837).

Palace of the Duke of Sutherland. — I have now acquired an idea of the style and splendour of the residence of an English duke. Being furnished with two letters, by the favour of Her Royal Highness the Duchess of Cumberland and Her Royal Highness the Princess Louisa of Prussia, I waited upon the Duke of Sutherland. I was received in the kindest manner, and the duke himself showed me the principal parts of his house. By its extent, its noble proportions, the solidity of the materials (it being entirely built of hewn stone), and the beauty of the situation, it is superior to all the other mansions in London. Erected by the architect B. Wyatt, for the late Duke of York, it was purchased and finished, after the duke's death, by the late Marquis of Stafford, father of the present Duke of Sutherland. His Grace has, however, added a story to it. From the windows you enjoy a free beautiful view. From the one side you overlook the whole of the Green Park, and on the other St. James's Park, with lofty trees of the most luxuriant growth,

between which the towers of Westminster Abbey rise in the background. Yet the eye always returns to the interior of the apartments, where it is attracted by a variety of objects; for, besides the niches and the splendour which the hangings, curtains, and furniture every where display, the more noble and refined enjoyment which works of art alone can afford is nowhere wanting. The marble chimney-pieces are adorned with small bronzes and elegant vessels after the most celebrated antiques. There are likewise some antique busts and bas-reliefs. But the chief ornaments are the paintings of the Italian, Flemish, Spanish, and modern English schools; and the duke, who is one of the richest men in England, continues to add to the collection. A gallery, lighted from above, which he showed me in the new story, will contain, in a few years, the most valuable paintings. The duke, who in his youth resided a long time at the Prussian court, has preserved the recollection of that time, as appears from the portraits of many members of the royal family of Prussia, among which the most remarkable is the bust of the queen, executed in marble by Rauch, after his monument at Charlottenburg. On a later visit to Berlin, when I had an opportunity of showing to the Duke and Duchess of Sutherland a part of the King of Prussia's pictures from the Solly collection, he duly appreciated the versatile genius of Schinkel. The manner in which His Grace spoke of the elegance and richness of Schinkel's invention, convinced me that he is justly placed in the first rank of the present patrons of art in England. (*Ib.*)

London Street Houses.— All the new houses of any size are plastered or stuccoed. In the old houses, on the contrary, the bricks of which they are built are exposed; though it is only for the first few years that you can distinguish their colour; for the smoke of the coals soon draws its veil thicker and thicker over them, and covers them with that universal grey, which gives London such a monotonous and melancholy appearance. The outside of these brick houses is very plain, and has nothing agreeable in the architecture, unless it be the neat and well-defined joints of the brickwork. On the other hand, many of the great palace-like buildings are furnished with architectural decorations of all kinds, such as pillars, pilasters, &c. There are, however, two reasons why most of them have rather a disagreeable effect. In the first place, they are destitute of continuous simple main lines, which are indispensable in architecture to produce a grand total effect, and to which even the richest decorations must be strictly subordinate. Secondly, the decorative members are introduced in a manner entirely arbitrary, without any regard to their original meaning, or to the destination of the edifice. This absurdity is carried to the greatest excess in the use of columns; these originally supporting members, which, placed in rows in the buildings of the ancients, produce the combined effect of a pierced wall which bounds one side of a space beyond, are here ranged, in numberless instances, as wholly unprofitable servants, directly before a wall. This censure applies in an especial manner to most of the works of the lately deceased architect Nash. In truth, he has a peculiar knack of depriving masses of considerable dimensions of all effect, by breaking them into a number of little projecting and receding parts; but, in the use of the most diverse forms and ornaments, he is so arbitrary, that many of his buildings (for instance, the new palace of Buckingham House, and some in the neighbourhood of Waterloo Place), look as if some wicked magician had suddenly transformed some capricious stage scenery into solid reality. This architect is even more capricious in some of his churches; for instance, All Souls, in Langham Place; a circular building in two stories, with Ionic and Corinthian columns, surmounted by a pointed sugar-loaf. But what shall we say to the fact, that the English (who first made the rest of Europe acquainted with the immortal models of the noblest and chastest taste in architecture and sculpture of ancient Greece, in all their refinement) produced, when it was resolved, a few years ago, to erect a monument to the late Duke of York, nothing but a bad imitation of Trajan's pillar? This kind of monument, we know, first came into use among the Romans,

a people who, in respect to the gift of invention in the arts, and in matters of taste, always appear, in comparison with the Greeks, as half barbarians. The very idea of isolating the column proves that the original destination, as the supporting member of a building, was wholly lost sight of: besides this, the statue placed on it, though as colossal as the size of the base will allow, must appear little and puppet-like; and the features, the expression of the countenance, the most important designations of the intellectual character of the person commemorated, are wholly lost to the spectator. In Trajan's pillar, the bas-reliefs on the shaft give at least the impression of a lavish profusion of art; but this Duke of York's column, with its naked shaft (which, besides has not the advantage of the entasis), has a very poor and mean appearance. If the immense sums expended in architectural enormities had always been applied in a proper manner, London must infallibly have been the handsomest city in the world: I must, however, add, that several buildings are honourable exceptions. Among the older ones, I would only mention Somerset House, which, by its simple proportions, corresponding with its great extent, produces the effect of a royal palace; and, of modern buildings, the new Post Office, built by the younger Smirke, the exterior and interior in the elegant Ionic order, has a noble effect. Amongst the most stately buildings at the west end of the town are the club-houses. Each of these houses has fine saloons for reading-rooms, and for a library, and also a complete culinary establishment. The whole arrangement is so extremely elegant, and they are such agreeable places of resort, that the ladies have reason on their side, when they vehemently declaim against these establishments, as taking the men away from their family circles. (*Ib.*)

A new Street is projected from Westminster Abbey to Pimlico, by Mr. Bardwell. Other great changes are contemplated in that quarter, including the erection of a market. — *G. Dec.* 2. 1837.

Improvements in the North-western Part of London. — Two new squares are now being formed on the west side of the Edgeware Road, on the large space of ground between the back of Oxford Terrace and Connaught Square. The one to the north of Burwood Place and St. John's Church is called Cambridge Square, that to the south Oxford Square. Another to the west of them is also commenced, termed Hyde Park Square; and the fine row of first-rate houses named Hyde Park Gardens, on the Uxbridge Road, facing the Park, are nearly finished. The Park itself has recently been much improved, by the judicious substitution of an iron railing for the long dead wall which constituted its northern boundary; by the erection of the Victoria Lodge and Gates, and by the formation of a broad gravel walk (with handsome and substantial iron guard-rail and posts) from Cumberland Gate to Kensington Gardens. — *G. B. W. London, Dec.* 1. 1837.

Specimens of painted Glass. — Those of your readers who are lovers of painted glass, I beg to refer to a specimen that may be seen at Brooks's glass repository, Strand, which is an admirable imitation of the window painted by Jervas, and designed by Sir J. Reynolds, in New College Chapel, Oxford.

In Russell's curiosity dealer's shop, King Street, Covent Garden, there is also a small painted window of the Crucifixion, which might form, in a larger one of the Gothic style, a very good centre-piece, with a border. It was no doubt the work of an old master; but, as I could not learn whence it is taken, his name is unknown to me. — *Frederick Lush. Nov.* 30. 1837.

Lancashire. — *Liverpool Observatory.* — The report of the Dock Committee having been read, it was stated by the Mayor that, in consequence of the Dock Committee having rescinded their resolution to contribute towards the expense of establishing and maintaining an observatory, the town clerk required the instructions of the council as to a clause in the bill relating to the Borough Court, the observatory, and other subjects. The question was, whether the clause was to stand, as the council would have to bear the whole expense.

Mr. Lassell said they had voted three or four thousand pounds for the mere

taking away the corner of a street; and he trusted that this subject would not be lost sight of. He urged the necessity of an observatory for maritime purposes, and mentioned an instance that occurred the other day, in which two chronometer-makers had given different times, making a variation of sixty-seven miles in longitude.

Mr. Earle thought it quite lamentable that, in the present day, any argument should be necessary to show the expediency of building an observatory. One estate had 200,000*l.*, the other 100,000*l.*, a year, and yet they could not expend two or three thousand pounds for such a purpose as this. What was money for, if it were to lie in their coffers? If there were any motive of saving connected with the question, he could only apply the word contemptible to it.

Mr. Platt said that, if the act were obtained, it would not be necessary to follow it up immediately. It would be shameful, if in such a port as Liverpool they could not establish an observatory. It was an object of great importance: they would soon have a number of subscribers to support it, and ultimately it would turn out to be no expense to the corporation.

Mr. H. Hornby thought it incumbent on some members of the Dock Committee to state the grounds on which they had changed their opinion. He had not yet heard the slightest reason for it. It appeared to him perfectly obvious that this was an expenditure of money which would be more useful to the Dock estate than to the corporation. Surely, it was desirable for the interests of navigation that there should be the means of taking correct observations; and, in promoting mercantile interests, the prosperity of the Dock estate must be increased. They could not oblige the Dock Committee to undertake the expense; and, as the question was one of very great importance, which, if not undertaken now, would not be undertaken at all, he moved that the town clerk should take such steps as would enable the corporation to erect an observatory. Mr. Jordan seconded the motion; but, after a good deal of discussion, Mr. Currie having proposed that the subject should be postponed for the present, that proposition was carried by a considerable majority. (*Liverpool Mercury*, May 11.)

Watering Troughs for Cattle. — Mr. Platt presented the report of the committee, recommending the erection of two watering troughs for horses and cattle at the south end of the town. He stated that the cost of erecting the troughs would only be 65*l.*, and the annual outlay afterwards only 15*l.* a year each, and that the carters and owners of horses were most willing to contribute towards the expense. He moved that the report be confirmed, which, after some discussion, was done accordingly. (*Ib.*)

Manchester. — Manchester Architectural Society's Conversazione. — Mr. Parsey's Lecture. On March 7. the members of the Manchester Architectural Society held their periodical conversazione in the Society's rooms, Mosley Street, at which Mr. Parsey was present by invitation, and a good attendance of members. After the members had adjourned to the library, and Mr. A. Hall had taken the chair, they proceeded to the election of trustees to the Society, when the choice fell upon the following gentlemen: — Mr. Richard Lane, Mr. James Heywood, Mr. J. Fraser, Mr. George Peel, Mr. A. Hall, and Mr. James Adshead. Mr. Parsey of London was then called upon, and proceeded to deliver a short lecture on his new principles of perspective. In opening his address he said, —

That the problem of perspective has not been solved requires no argument, from the known existence of so many opinions on the subject. Opinion always implies doubt; and, where we find diversities of it, at most there can only be one in the right. The theory, as it has been promulgated, after the labour of its acquirement, has always left on the mind of the practitioner many questions of its truth. It is universally confessed that judgment disallows a strict adherence to its rules. To obviate any future conflict of opinion, the lovers of the fine arts, and the promoters of sound and useful

knowledge, must test the existing theories of vision by the unerring laws of nature, from whence only we can hope to discover a standard of taste. First, then, we must discover the laws of nature, whose unerring principles only can be the legitimate guide of practice. We must throw aside all prejudices, naturalised, as it were, by preceding custom; and, for the sake of truth, and the happiness and fruitfulness it produces, not only enjoy its benefits ourselves, but transmit its valuable influence to future generations. No practice can be good or safe unless it is founded on permanent principles. The future satisfaction and improvement of art and science depend altogether on this investigation, and the establishment of a practical science of vision. As respects the purposes of art, the science of perspective proposes to define the images of external objects as seen by the eye. It would be ridiculous to append "as seen by the eye," to the definition of the art, as nothing can be seen but by the eye, were it not to distinguish optical effects (upon which our natural ideas depend) from those shapes which in abstract science may be required for solutions unconnected with vision. It will be evident that, whether we require the practical skill of drawing the appearances of objects or not, the understanding loses a necessary and valuable power, in not being capable of apprehending natural effects; hence, the principles of visual science are not less valuable to common knowledge than to the draughtsman and the refined and cultivated mind.

It is only to the theory of perspective that society can look for information on this head; and how few there are, even among the practitioners of art, who are in any degree versed in this knowledge, imperfect as it is! And why? because of its unintelligibility, and its mandates clouding the purer conception. The practice at present consents to the following leading laws: — Vanishing points produced by parallels to the base lines of the object, from the point of station, cutting the line of projection through the nearest point of the object; the adjustment of the horizontal line (on which the vanishing points are fixed) at the height of the draughtsman's or spectator's eye from the base line of the elevation; a vertical section of the visual rays proceeding from objects to the eye, that is, a section perpendicular to the ground plane, or natural horizon; and the invariable erection of the geometrical altitudes of perpendiculars in all elevations or depressions of the point of view. On these leading features of the old system are established the consequent minor details of the art. Writers have introduced various methods to facilitate the practice, but a strict adherence to these fundamental rules has been observed by all; so that in contrasting mine it is not necessary to particularise any author's system. I will now explain these rules by my models and diagrams, after which I will lay before you my new theory; or, I should have said, the *principles* I have perceived to be the *causes* of unalterable and unavoidable optical effects.

Mr. Parsey then explained that, in the old system, he held the only true case to be when the horizontal line passes through half the altitude of the object with equidistant vanishing points. He then entered into an explanation of his own system, in which he held that the lateral plan exhibits the true plane of the picture, which demands an optical placing of the vanishing points, a natural adjustment of the horizontal line, the visual reduction of altitudes to agree with reduced horizontals in width and depth, with the consequent minor details of the visual science. This formed the principal feature in the explanatory part of his lecture. He continued: —

"The effects, and the practical principles I have laid down for producing them, I have not defined by ingenuity, or on any peculiar views of my own; they are not a contrivance to gain popularity for novelty's sake; but they are the natural causes of the infinite, unavoidable, and incessant influences of external nature on the vision of all mankind. To these, then, we must consent; by these we must be guided in our theories, and by these only can we produce ideas, and pursue our practices on rational grounds. Before my theory and its adoption can be opposed, it must be shown that these are not the

elementary laws of nature; and some justification must be given to the world for persisting in a system at variance with truth and nature, and with the present professions of societies and individuals for the advancement of science: wilful and obstinate, indeed, will be the continuation of erroneous practice; and wicked, I may say, will be the dissemination of doctrines known to be suppressive of a right understanding of that faculty, by which, if we make a right use of the divine boon, we may "look from nature up to nature's God."

Amongst his testimonials, Mr. Parsey mentioned those of the Rev. J. B. Reade, nephew of the late Professor Farish, author of *Isometrical Projection;* R. R. Reinagle, Esq., R.A.; the late John Constable, Esq., R.A.; William Etty, Esq., R.A., &c. He went on to say, —

"It is said on all sides that my theory is correct; but that it would be absurd to put it into practice. The admission of the truth of my principles at once does away with any absurdity in adopting them; for it would be tantamount to insanity to argue, that practice may be justly pursued on false principles. It is the perfection of human efforts to combine principles and practice.

"Deem me not presumptuous or arrogant in calling upon this learned and influential Society to set the example of public recognition; and, as Manchester is a point from which so many improvements in art, science, and manufacture emanate, to claim to ourselves the distinction of being the first public body to acknowledge the accomplishment of this desideratum. Lay the foundation stone of the temple of tase, unfurl the standard, and place the British school of art on a proud preeminence. Deter not merit from struggling for the universal good, and let the persevering see that their efforts will not be in vain. The art of design, in all its branches, must be feeble till its root be cultivated and nourished. A perfect theory of perspective has been anxiously sought by the refined of all polished nations. Hail, then, the accomplishment as a British achievement, and let our native talent first reap the advantages of an improved practice."

At the conclusion of the lecture, Mr. Parsey entered into conversation of nearly one hour's length, freely discussing with the members his new principles, meeting any objections which were suggested, and more familiarly illustrating his views. A vote of thanks was then proposed to him, which was instantly carried by acclamation. Mr. Hance addressed the members, and stated that he had been decidedly prejudiced against the new system; but, from instructions received of Mr. Parsey, he was a decided convert. The members separated at a late hour, after one of the most gratifying meetings they have had since the establishment of their Society, which now bids fair to take root and rear its head amongst the permanent institutions of the town. (*Manchester Times*, March 10. 1838.)

St. Helen's. — We understand that the inhabitants of St. Helen's have, with their usual spirit, had a public meeting for the purpose of entering into arrangements for the erection of a town hall, constable's house, bridewell, &c., on rather an extensive scale; after which a subscription list was immediately opened, and in less than seven days 3,000*l.* subscribed. Plans are to be forthwith advertised for, and it is expected that early in January next the building will be ready for use. The situation is on the south side of the New Square, which has lately been laid out and flagged in the centre, and which is intended to be used as the Market-place. This square is already nearly built round with handsome shops and lofty houses, four stories high, all of which are uniform, beautifully stuccoed, &c.; and, when finished, will be one of the handsomest squares in Lancashire; being hitherto under the superintendence of Mr. Fowden of Manchester, for the Society of Friends, whose property in St. Helen's is, we believe, rather extensive. (*Ib.*)

SCOTLAND.

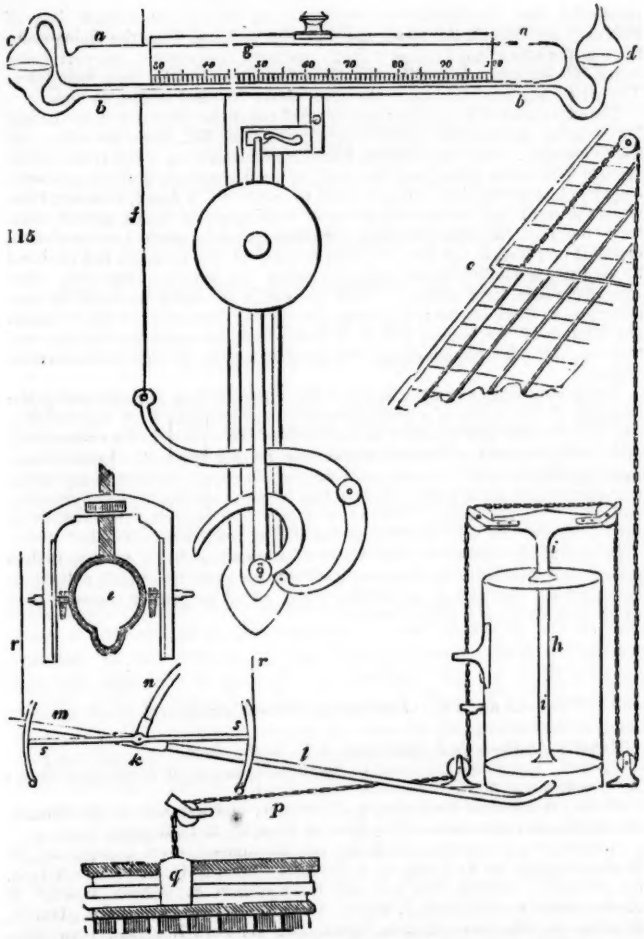
LANARKSHIRE. — *Glasgow.* — Not a single member of the Mechanics' In-

stitution of Glasgow, containing about 600 members, has ever been concerned in a strike. (*Newsp.*)

RENFREWSHIRE. — *A new Water Power.* — The discovery of a new application of water power, which is likely to be attended with most important consequences, has been lately made by a tradesman in Greenock. Like all truly valuable discoveries, it is distinguished alike for simplicity and efficiency. It consists of a cylinder and a piston similar to those employed in a steam-engine. To the cylinder there are two entrance and two discharge pipes, one of each on each side of the stuffing-box of the piston. The same turn of the cock that admits the water into the one part of the cylinder opens the discharge pipe in the other, and thus a vacuum is formed. To work this, advantage is taken of the pressure of the Shaw's Water, the height of the reservoir of which gives it a force of 60 lb. to the inch, in the lower parts of the town of Greenock. A short time ago, an experiment was tried with a cylinder 2 in. in diameter, worked with a jet of water of somewhat less than a quarter of an inch in diameter, and the piston, although loaded with 1½ cwt., rose and fell 16 times in the minute. In this case the entrance and discharge pipes were equal in size, and the cylinder was placed in a vertical position. Since then, the discoverer has had another model made with the cylinder laid horizontally, and with the discharge pipes nearly three times as large as the entrance ones, and by this means the motion was increased to 26 double strokes in the minute. The cheapness of an apparatus of this kind, and its efficiency, wherever there is a sufficient height of water to work it, must be obvious to all, while its manageableness and freedom from danger are no less conspicuous. The merit of this discovery is due to Mr. William Allison, a mason of Greenock, who first suggested this novel application of a well-known power to Mr. James Baird, engineer, and Mr. A. Fairgrieve, plumber, who had materially aided him in reducing it to practice. One use to which Mr. Allison conceives it to be peculiarly applicable is, the hoisting of heavy goods into warehouses. The Shaw's Water Company, for 7*l.* a year, gives a supply of water equal to 1000 gallons per day. This water injected into a cylinder 10 in. in diameter, he calculates, will raise to the second floor 300 tons per day; to the third floor, 200 tons; to the fourth, 150; and to the fifth, 100 tons. The cost of the water for each day's work is about 5*d*. The goods in question will be raised at the rate of 39 ft. per minute. These calculations have proceeded upon the pressure of the water introduced into the town for domestic purposes; but a pipe from the Compensation Dam at the Paper Mill, from its superior height, would give a pressure of about 200 lb. on the inch. (*Greenock Advertiser*, as quoted in the *Dumfries Courier*, Sept. 6. 1837.)

A similar application of water was made by Mr. Kewley, about 1819. The object was to open and shut the sashes of a dwelling-house or a green-house, so as to regulate the temperature within; a thermometer of a particular description being employed to turn the water off and on instead of a man. See *Encyc. of Gard.*, ed. 1835, p. 557., from which we make the following extract:—

"*Kewley's Alarum-Thermometer* (*fig.* 115.) consists of a glass tube (*a a*) about 10 in. in length, hermetically sealed at one end, and united at the other to a capillary tube (*b b*), with an intervening and also a terminating ball (*c* and *d*). Imagine this double tube placed in a horizontal position, the larger tube, and half the intervening ball, filled with spirits of wine; and the smaller tube, and half of both of the balls, with mercury. If the tube be now fixed by its centre in a brass frame (*e*), and nicely balanced, it is evident that every change in the temperature of the atmosphere will produce a change in the position of the centre of gravity of the tubes. One degree of heat, by expanding the spirit, will press on the mercury in the intervening ball (*c*), and drive part of it over to the terminating tube (*d*), which end will, in consequence, descend like the beam of a pair of scales or of a steam-engine. Hence, a moving power of great nicety and certainty is obtained, the details of the application of which to the ringing of a bell at any distance, communicating by a wire (*f*), need not be here entered into. Suffice it to say that, by means of a scale (*g*), it may



be set to any required temperature, and will give the alarm at a difference of even the fourth of a degree either of depression or elevation. It may be occasionally used in gardening, to convey some idea of the changes taking place in the temperature of particular hot-houses, to the head gardener's room, in the night-time; but its most important uses are in domestic economy, hospitals, &c. This balance-thermometer, as it may be called, has been also applied, by its ingenious inventor, to the opening and shutting of windows or sashes, valves of chimneys or flues, and steam-cocks, and either to all of these purposes at once, or to any of them.

IRELAND.

Dublin, May 30. 1838.—My house (see Vol. IV. p. 84.) is now approaching completion. The warming and ventilating arrangements have been more

successful than I ventured to anticipate, as, during the coldest days of February and March, the whole space of the building, from the dining-room floor to the attics, was kept at a pretty uniform temperature, no part being below 50° nor above 60°, although the walls were then far from being dry. The air issuing from the stove was never above 70°, and seldom so high.

The experience of last winter has satisfied me of the efficiency of my devices for securing water-pipes, water-closets, gas-meters, &c., from the effects of frost; except in one case, where I had apprehended no danger, viz. in the vertical rain-water pipe from the roof, which, I imagined, from being always empty unless during rain, was not liable to accident. I found, however, that, when the sun began to have the power of making partial thaws, melted snow from the roof ran into the pipe, froze there, and, by gradual accumulation, closed it up; and, if this had not been noticed at the moment, and obviated by throwing a handful of salt into the gutter and mouth of the pipe, some mischief would have ensued. I fear this evil is not easily remedied by construction, as there are many objections to carrying down the rain pipe through the interior of the house; and it is lucky that, by opening a skylight and throwing out a few pounds of salt, the mischief may be avoided in the severest winter.

The person who, since the death of the contractor, is superintending the finishing of the house, is a house carpenter (a Scotchman from Edinburgh); and I have never met a person in his rank of life who united so much skill, taste, and judgment, with such respectable regular conduct. I cannot help thinking that he would be a valuable acquisition as an overseer to any architect carrying on great works. I should be happy to see his merits appreciated and rewarded; and hope, if you know of any one requiring the services of such a person, you will have the goodness to let me know. — *J. M.*

[If any of our readers should know of a situation likely to suit such a person as is mentioned by our correspondent, we shall feel much obliged to him if he will let us know, as nothing would afford us greater pleasure than to be useful in such a case. — *Cond.*]

Art. IV. *Institute of British Architects.*

April 9. 1838. — P. F. Robinson, V.P., in the chair.

Elected. His Grace the Duke of Northumberland, as an Honorary Fellow; A. Moseley, and A. C. Hakewill, as Associates.

Read. A paper on Porticoes, by J. Britton; and another on the Nature, Properties, and Elementary Principles of Iron, by A. H. Renton.

April 23. — *Presented.* Raccolta de' Monumenti sacri e sepolcrali di Roma, designati da F. Thon, ed. a Becchio. Serie di Opere d'Architettura, ed. dall'Arch. Moraldi, Nos. 1, 2, and 3. Cavalieri S. Bertolo Institu^ni di Architettura Pratica, vols. 1. and 2. Canina, Architettura Antica, Græca, Romana; 3 vols. 8vo. Canina, Descrizione del Foro Romano: 1 vol. 8vo. Tracings of the Drawings of a Synagogue, erected in 1832, at Copenhagen, from M. Hetsch. Engravings of the Cathedral of Roeskilda, eight leagues from Copenhagen. View of the Castle of Cronberg, near Elsinor. Views of the old St. Paul's and the Chapter House.

Read. The continuation of Mr. Renton's paper on Iron; and a paper on the Plan and Decoration of the Temple Church, London, particularly with regard to their typical Significations in reference to the Doctrines, Customs, and Ceremonials of the Knights Templars, by R. W. Billings.